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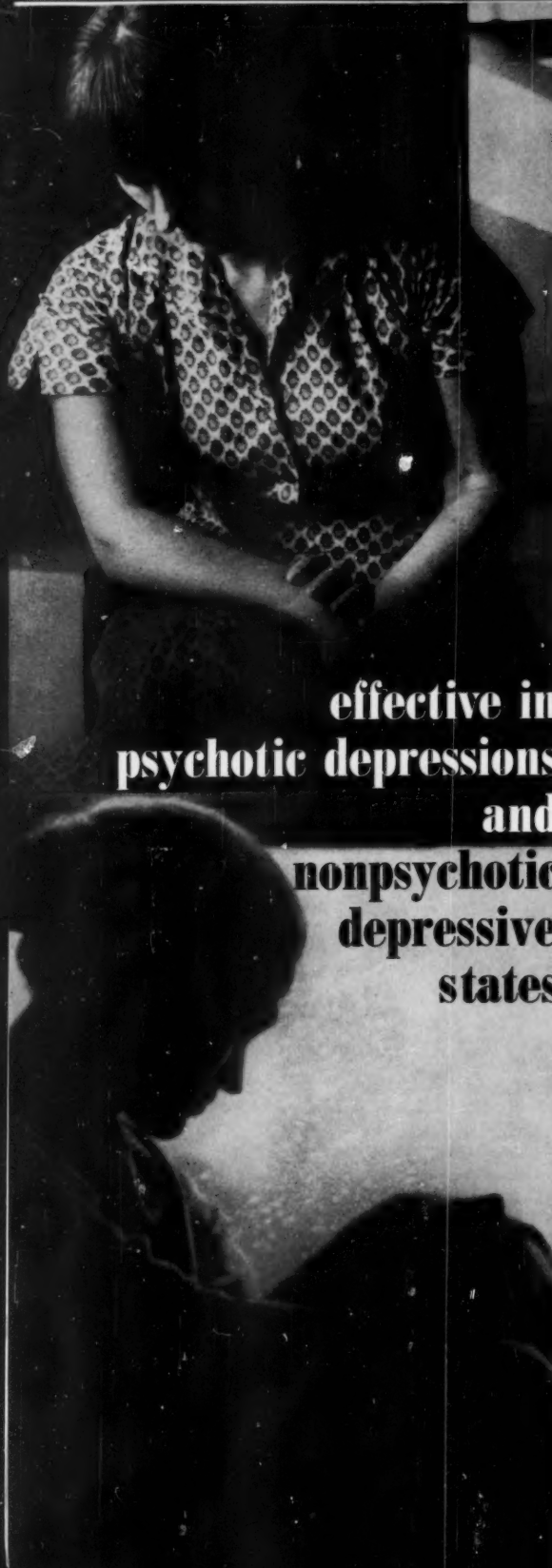
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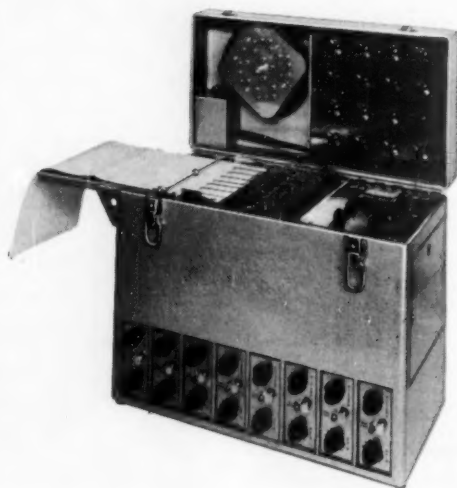
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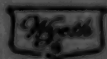
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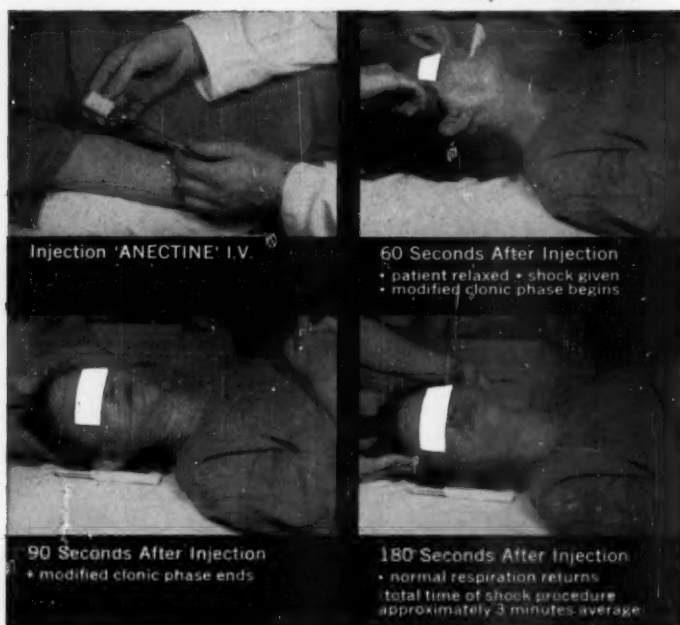
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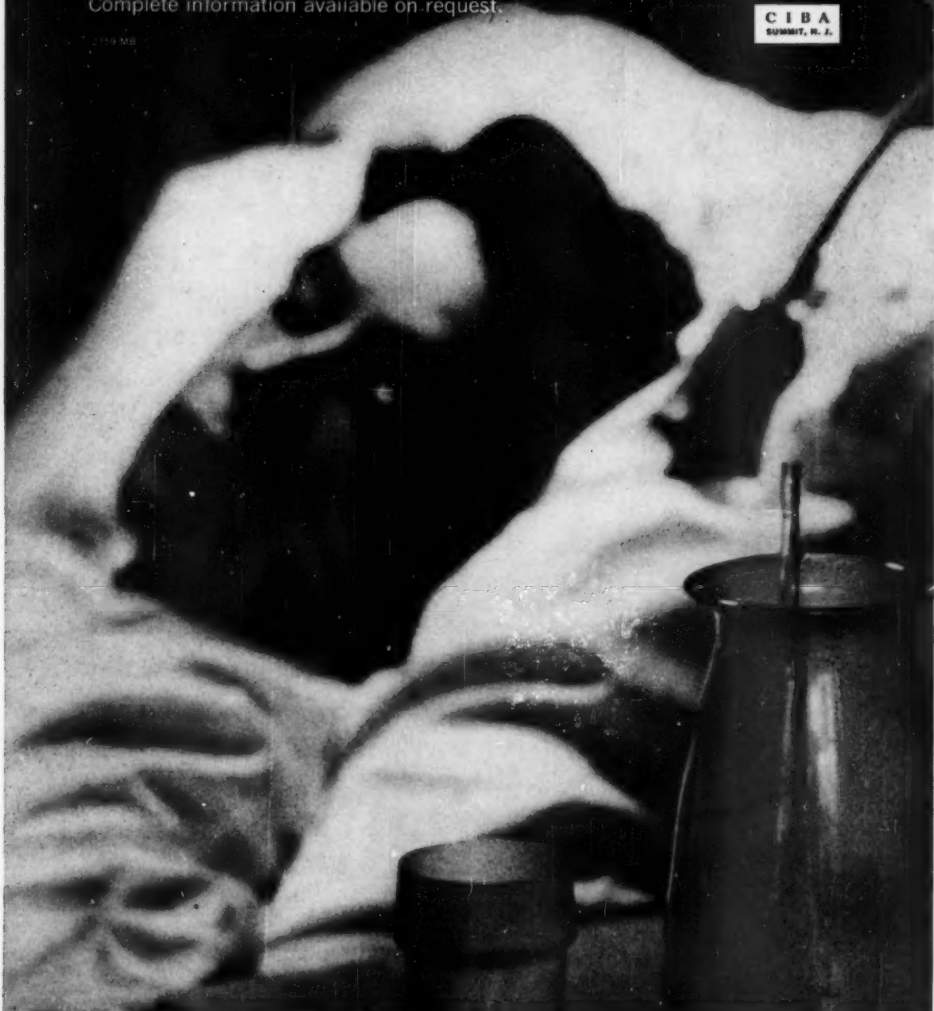
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INTRODUCTION

Experiences useful in learning new behavior may occur with or without other persons. If they occur with other persons, these may or may not be formal psychotherapists. When patients recover by themselves or with the help of persons other than trained psychotherapists we consider their recoveries "spontaneous."

Reports of instances of spontaneous recoveries from the psychoneuroses have appeared from time to time in the literature of psychiatry and psychoanalysis (1, 2). References to the subject in psychoanalytic writings sometimes leave the impression that such recoveries occur rarely and that when they do, the recoveries are usually insubstantial or transient (3). Recently several independent studies of untreated patients with psychoneurosis have shown that between 40 and 60% of such patients recover within a few years of the first observations of their conditions (4, 5, 6, 7). In these studies, the investigators applied criteria of recovery used for patients who have received psychotherapy and this leaves no grounds for supposing that the spontaneous recoveries were spurious or any less stable than those brought about by treatment. Apparently the patients who recovered spontaneously had experiences in their life situations which permitted them to unlearn maladaptive behavior and learn new, more adaptive behavior.

Several therapists have reported series of patients treated by methods which make deliberate use of the patient's opportunities for learning with persons other than the therapist (8, 9, 10). The results with these methods seem fully as good as those with psychotherapies that emphasize the patient's

experiences with the therapist. Moreover, the results were achieved in a much smaller number of therapeutic hours, presumably because "practice" between therapeutic sessions reduced the time needed for instruction just as it does in learning to dance, ski, or speak a foreign language. We cannot make final judgments of the merits of different therapies without careful comparisons of matched groups of patients treated by different methods. The comparisons mentioned, however, justify careful studies of the processes of spontaneous recovery. From investigations of such recoveries we may learn new ways of facilitating recovery from the psychoneuroses in those patients who come to us for treatment.

For some years I have collected accounts of spontaneous recovery from mental illnesses or improvements in them. I have gathered these from a number of places, including patients, friends, and various published sources.³

In considering changes brought by life experiences, I refer to changes in habitual behavior and attitudes, and not to changes only in feeling states. Thus the pleasant glow which might follow hearing that one had inherited a fortune is a change of feeling, not of values nor of behavioral responses; I believe that a person changes his personality only when the inheritance of a fortune comes to mean less (or more) to him than it did previously, *i.e.*, when the same outward event produces in him a different response.

In making the distinction between changes in feelings only and in behavioral responses, I do not mean to say that a favorable turn in the patient's life situation can only bring a change in feelings. Many of the cases I have collected show the value of changes

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in a patient's life which provide him with opportunities for learning new behavioral responses. For example, Abraham reported a complete reform in a man who had been all his life a cheat and impostor. The transformation of this patient occurred after his marriage to an elderly widow who satisfied his needs for affection and attention which he had previously only gained by dishonesty(1). Nor do I mean to devalue the importance of changes in feelings as helpful to recovery, but by themselves such changes in feelings make unreliable indicators of improved resistance to life stresses.

Important changes in life situations often occur to patients undergoing psychotherapy. The psychotherapist then has an excellent chance to observe any subsequent changes in the patient's behavior. The ongoing psychotherapy may sometimes make difficult the separation of effects on the patient's behavior derived from the psychotherapy and the effects derived from an apparently important life experience outside therapy. Among my examples I have included a few from patients in psychotherapy, but only when it seemed clear to me that a marked change in the patient's behavior began after some important experience outside the therapy, which experience the patient himself or persons around him had initiated.

I have grouped the examples below under headings which I consider convenient and not necessarily explanatory. Certainly overlapping occurs and other interpretations may prove more valuable than those I have suggested. The examples have in common a marked change in the patient's behavior brought about through his own activity or through experiences in his life outside psychotherapy, although not necessarily independent of it.

EXAMPLES

Desensitization through Recall, Verbalization, and Assimilation of Past Painful Experiences. Many experiences gain and lose their meaning for us by being brought into association with other significant experiences. An event evokes anxiety by reminding us, not necessarily consciously, of earlier threatening events. But it may cease to make us anxious when we bring it into

association with new or old experiences which have other non-anxious qualities. The processes of retroactive interference and assimilation, as Bartlett(11) called them, go on continually. They may proceed with little or no external aid, both consciously and unconsciously(12).

John Stuart Mill described in his autobiography(13) a severe depression from which he suffered when a young man. The depression occurred when Mill realized that his zeal for reform concealed his own interest in himself behind a pretense at improving the lives of others. Guilt, apathy and inertia followed this insight. Mill attributed his eventual recovery after 2 years of illness to the reading of Wordsworth's poetry. He thought that the poems benefited him, first, by evoking in his mind memories of the happy country scenes of his childhood, and secondly, by arousing once again strong emotions which in his depression he had ceased to feel.

Fechner, the great 19th century physicist, psychologist, and philosopher, suffered from a severe depression with hypochondriasis from which he recovered at the end of 3 years of almost total disability. His pupil Wundt attributed Fechner's recovery to autosuggestion(14). The affirmations given in suggestions whether provided for the patient or by himself, constitute new images (or the revival of old ones) that neutralize the effect of the dominant pathogenic images. For this reason I have placed Fechner's recovery in the group with Mill's and the examples which follow.

The processes by which one event, in the present context a painful one, is brought into association with others which are less painful or less injurious to self-esteem, take place more quickly if the sufferer expresses the painful events in words to other sympathetic persons. Sophocles(15) knew this, and so did Shakespeare(16) and Tennyson(17). The relief experienced after confiding one's distress in others has made this an almost universal mode of effective psychotherapy.

Janet, Breuer, and Freud discovered that much relief can occur when the patient recalls and verbalizes not only experiences which he remembers but also those he has forgotten or repressed. Psychopathologists

still dispute whether such de-repression is a requirement of recovery from a psychoneurosis as Freud claimed. All agree, however, that this process often has value in facilitating recovery. It may occur outside psychotherapy as the following example shows.

A 44-year-old woman (not a patient) told me the following story. From early childhood she had repeated nightmares in which she was frantically looking for someone and was extremely frightened at not having found this person. After her marriage in her early thirties, these continuing nightmares kept her husband from sleeping. He finally asked her what she was dreaming. Upon hearing her description of them, he asked her if she had in fact ever been lost. My friend thereupon remembered that when she was 5 years old she had been lost in the bolt goods section of a department store. Being then small, she walked back and forth in the aisles, hidden by the bolts and herself unable to see above them. Eventually she was found. The nightmares began after this episode. After my friend recovered this memory, the nightmares abruptly ceased and had never returned in the 10 years following. No strong emotion accompanied the recall of the childhood experience, and the recall did not seem at the time particularly important. My friend did not expect that it would influence the occurrence of the nightmares and later noted with surprise that they had ceased. The sympathetic interest of her husband may have contributed to the cessation of the nightmares, because my friend not only recalled the episode of being lost, but told it to him.

Desensitization through Association of Experiences which have Aroused Anxiety with New Pleasurable Experiences. An anxiety-arousing (so-called traumatic) experience may be brought into association with new experiences as well as with old experiences remembered and sometimes verbalized. If the patient becomes able to associate the traumatic experience with some new experience which gives pleasure or satisfaction, the previously painful situation loses its capacity to stimulate anxiety. An awareness of not having fled, i.e., of having "mastered" a stimulus for anxiety may accomplish this as the following case suggests whom I treated with psychoanalysis for several years.

A male medical student who had a great many symptoms of anxiety which a wide variety of

situations stimulated was especially prone to anxiety when on display in front of groups of other people. Thus as a medical student he loathed to present his cases on ward rounds and went to great lengths to avoid this. By various means he was able, while a student, to escape from nearly all such situations. For example, when his turn came to present a case, he would absent himself or persuade another student to present his case for him. Although he made much progress during psychotherapy with other symptoms, he made none whatever in this matter.

As the time for his graduation approached, he dreaded the prospect of internship in which situation he knew he would be less able to avoid the situations he feared. In June, he learned to his horror that he had been assigned first to ambulance duty. The prospect of having to go to the scenes of accidents and there administer treatment to injured persons with a large crowd gathered around filled him with severe anxiety. He tried unsuccessfully to persuade a secretary to alter the assignments so that he would not have to take ambulance calls until later, or never. As July approached, his anxiety became greater and greater. But when the first day of internship actually arrived, he decided he had no alternative but to make the best of the situation, come what might. On his first ambulance call he had so much anxiety that he took large amounts of sedatives which he had prescribed for himself. Everything went well, however, and he felt less anxious when the next ambulance trip came up. At each occasion his anxiety became less and he correspondingly reduced his sedation. Within 10 days he had dispensed entirely with sedatives and felt quite comfortable on ambulance calls. Apparently from each of the first ambulance calls he derived a sense of accomplishment which he feared he could not achieve. The recollection of his "successes" made him increasingly confident and, correspondingly, decreasingly anxious as his experience increased.

Herzberg(8) exploited this feature of learning in assigning to his patients series of tasks of graded severity. The accomplishment of each task provided the patient with a sense of accomplishment or mastery which made easier his undertaking and accomplishing the next task. Wolpe(9) has also shown that the gradual but persistent association of pleasurable responses (e.g., sexual pleasure) with situations formerly evoking anxiety will eventually reduce and

abolish the capacity of these situations to evoke anxiety.

Any strongly pleasurable activity or any response which contributes to the reservoirs of self-esteem in a person will tend to neutralize a "painful" experience and thereby reduce or abolish its capacity to evoke anxiety. The following case illustrates this principle.

A man who suffered from a severe claustrophobia determined to overcome this fear and did so in the following manner. He deliberately exposed himself to situations evoking his phobic reaction, e.g., trains, street cars, and elevators. Then he "confessed" his disability to a number of friends singly and in groups. He found relief in learning that many of them had had similar fears, and in the acceptance of him by others who had not. This reduced the shame he had felt with regard to his phobia and so increased his self-esteem and confidence. When he felt some initial reduction in his fears of confinement, he began a program of riding on street cars while reading which he had always enjoyed. Gradually he established an association between the pleasurable activity of reading and riding on street cars. This program led to a steady abatement of his anxiety which had completely disappeared within a year of his starting his treatment of himself. He had had no recurrence of anxiety in the 3 years following this before he made his report (18).

Increased Supplies of Respect, Reassurance and Affection from Other Persons. Good fortune may come in the form of new persons and new experiences from which a patient may learn new responses. Boverman has reported in some detail the influence of a kindly ward attendant in facilitating an ostensibly "spontaneous" recovery in a psychotic patient (19). Wolberg has reported another example of the same kind of influence by an attendant (2).

A young student was raised by an ill-tempered and shrewish mother, whose behavior so alienated the patient from women that he considered himself at the time of entering therapy doomed to homosexuality. He had almost no social relationships with girls and they had never got beyond the slightest physical contact. He seemed to select girls who were as inhibited sexually as himself. Not long after he began treatment he moved from one boarding house to another. Soon afterwards, an attractive girl

moved into the next room of the boarding house. They became acquainted and the friendship grew. They discovered that when they unlocked the connecting door between their rooms they could be together more often. The girl was outgoing and warmly affectionate. She was also experienced in the ways of sex and almost before the patient knew it, she had enticed him (or seduced him) so that he was soon enjoying sexual intercourse while entirely forgetting his fears of being a homosexual. They were eventually married.

In this case, a girl sufficiently different from the patient's mother and previous girls he had known provided pleasures sufficiently great to overcome his sexual inhibitions. By taking the initiative herself, she had largely compensated for his passivity. The mastery of his fears of sexuality brought the patient increased confidence which enabled him to handle better other sources of his anxiety.

The marked difference in capacity for affection between his girl friend and his mother may additionally have helped the patient to correct faulty generalizations about women which he had carried over from his experiences with his mother. Kolb and Montgomery (20) have reported an instance in which a patient's apparently spontaneous improvement coincided with his correcting his misperception of his therapist through having a different, more friendly, less formal exchange with him outside the standard therapeutic period.

The awareness of affection, aid, confidence, and other factors usually described under the heading of "support" often seems to permit human beings to face anxiety-provoking situations which they would otherwise avoid. Wolpe (9) has described the overcoming by his small son of a fear of jumping from a 3-foot wall. The fear came on after the boy fell from the wall once, and it continued until his father persuaded him to jump first while he held his hand and then merely looked on without holding the boy's hand. After a dozen jumps the boy jumped from the wall fearlessly even if his father were not present.

Situations of this kind often include several ingredients. In this case, the boy may have jumped again to please his father, also because his father held his hand. The desire

to preserve the affection and respect of new (or old) friends and acquaintances may account for some instances of recovery which are referred to in the literature of psychoanalysis as "transference cures." As children often attempt unpleasant tasks in order to please their parents, patients may undertake new behavioral responses to please other persons who may or may not be psychotherapists. These new responses may then bring additional gratifications which serve to reinforce the new behavior after the original stimulating relationship has ceased.

The cases of this group may resemble those of the last group in the process of improvement. The friendly, supportive person may provide a new stimulus of pleasure with which the previous anxiety-producing stimuli become associated as a result of which the latter lose their capacity to arouse anxiety. I have, however, grouped them separately because of the possibility that the supportive person by his interest in the patient exerts a generally beneficial influence through altering the patient's "self-concept." As the patient then begins to entertain different thoughts about himself he becomes less sensitive to previously stressful events and better able to encounter them adaptively.

Something of this kind seems to have occurred in the case of a depressed soldier during the Crimean War.

The soldier had participated in the charge of the Light Brigade at the battle of Balaclava. Subsequently he had become depressed and this, the camp physician believed, prevented his roovering from the effects of an injury he later received. An attempt to discuss with the apathetic soldier the charge in which he had participated elicited only monosyllabic replies. Tennyson's poem on the charge was then read to him and immediately kindled an animated response. The patient "entered upon a spirited description of the fatal gallop between the guns' mouths to and from that cannon crowded height." Within a few days the patient had entirely recovered and was discharged from the hospital. The camp physician attributed his recovery to the effects of hearing Tennyson's poem (21).

More than two-thirds of the soldiers in this charge were killed. The survivors

seemed to have experienced afterwards a state of shock to which several factors must have contributed. The experience seems to have had for the survivors a traumatic effect not only in the physical sense but also psychologically (22). Guilt over the failure of the charge and the deaths of comrades entered into this. Tennyson's poem diminished emphasis on the folly and failure of the charge and placed it on the discipline and heroism of those who participated. Thus the reading of the poem to the depressed soldier may have altered radically his view of himself in relation to the charge and thereby restored his self-esteem.

New Models of Behavior. Although men have known for centuries that children learn to speak through imitating adults, psychopathologists have only recently begun to emphasize the learning through imitation of other kinds of behavior, including abnormal behavior (23, 24, 25). Deprived of adequate models children may not learn what their more fortunate contemporaries learn; but they may still catch up. Thus, in a long-term follow-up study of untreated shy and introverted children, Morris, *et al.* (26) found that the majority had "recovered" by or in adulthood and were leading normal lives. Many had lost their shyness and had become outgoing, apparently as a consequence of having married more gregarious wives.

A patient of mine had lost her mother when she was 13. She had fallen under the rather tyrannical dominance of her father and had afterwards lacked close contact with mature women. As a consequence, she became stunted in the development of feminine qualities and failed in her early relations with men. At 29 she had not married and sought therapy. Two years of treatment prepared her for an opportunity which occurred outside the therapy. She joined the social club of a church and there found new models for feminine behavior among persons of her own age. A marked acceleration of her feminine development followed her joining this club and within a few months she was dating eligible men regularly. Shortly after this, she selected one as superior to the others, became engaged to him, and some months later married him. His mother proved an unusually kindly and sensitive person to whom the patient became warmly attached before and after her marriage. The pa-

tient's mother-in-law seemed to assist further the patient's feminine development by acting as another, if delayed, substitute for the patient's mother.

New Situations Requiring Different Responses. The loss of supportive persons through death, defection, or other kinds of separation, seems often to contribute to recovery from the psychoneuroses. Many persons have experienced a marked acceleration in their own maturation with the death of a parent which obliged them to live differently and more responsibly. The death of Freud's father seems to have freed him from certain inhibitions affecting his work (27). Other, lesser separations such as going away to school, college, work, or the armed services, have facilitated maturation by requiring new and more independent behavior. Usually the changes so wrought occur gradually; sometimes turning points seem clear, as in the following example.

A medical student I treated had strong feelings of inferiority with severe anxiety regarding his capacity to perform medical procedures. He believed himself hopelessly lacking in the necessary manual skills. Between his third and fourth years he took an externship at a distant hospital and I did not see him for several months. When we met again he showed much less anxiety and exuded such unusual confidence that I questioned him carefully about what had happened. He said that the hospital had a very small staff and the administrators had given the externs responsibilities far beyond those their training called for. Although initially frightened, the patient had undertaken all his assignments including the management of some serious emergencies. He especially recalled one occasion when a patient began to bleed profusely from an operative wound. In the absence of anyone more competent the extern was called to stop the bleeding. Upon first hearing of the hemorrhage he wanted to flee. Nevertheless, he had gone to the patient and eventually arrested the bleeding. This and other similar experiences, he thought, had greatly reduced his anxiety and increased his confidence.

Sometimes exasperation or changed circumstances modify the attitudes of those around a patient so that they come to expect or even demand a different kind of behavior from the patient. Two rather dif-

ferent examples of this have occurred in my collection of these cases.

A friend told me that in the early years of his marriage when he and his wife quarreled, she would completely abandon the housekeeping and would stop preparing meals, making beds, and washing laundry. All this inconvenienced him greatly and he tried with many arguments to make her see that she should not neglect her responsibilities when angry since he continued to discharge his. As his persuasive efforts failed, he finally became sufficiently annoyed to tell her that the next time she shut down her housekeeping, he would cut off her access to funds in their checking account at the bank. His wife now protested in her turn about this unfairness, as she believed it to be. Nevertheless, this threat became a turning point in her behavior. With occasional mild relapses, she thereafter kept up her housekeeping even when angry with him. Her husband, on his side, finally realized that her neglect of housekeeping was, among other things, a protest at his failure to help her with its more burdensome aspects. He began to assist her more so that housekeeping became less of a chore for her. This couple thus achieved a kind of *therapie à deux*.

A different kind of expectation occurred in the case of the son of one of my patients, who told me the following story.

At the age of 22, the son experienced a severe depressive reaction, which seems to have been precipitated by the induction of his brother into the armed services during the second world war. He, himself, had wanted very much to go into the armed services but could not do so because he was assigned to essential work in an aircraft factory. He became preoccupied by thoughts of inadequacy and inferiority in relation to his brother, and these developed into a severe depression. Following the onset of the illness, he spent about 3 of the next 6 months in a hospital receiving psychiatric treatment. The rest of the time he received treatment as an outpatient. At the end of 6 months, however, his condition had not improved; he continued quite depressed and withdrawn. At this time his father decided to bring him home, apparently with the concurrence of the patient's psychiatrist. The son returned home and his father intended to give him a position in his flour mill. He had realized that his son could not, in his mental condition, handle a responsible job and so had planned to give him some relatively minor position, al-

most a sinecure. The son had been home only a few days when his father took him on an automobile trip to attend to some business matter. The son, still very depressed, had apparently gone along only for the ride with his father. On the trip an accident occurred which rather severely injured the father's right hand. He was also knocked unconscious for a brief time, but the son was not injured at all. The disability of the patient's father obliged him to ask the patient to do various things for him which he had not intended to assign to him. Among other things he had to ask his son to sign checks and letters since he could not use his right hand. Within a few days the patient's depression began to lift and cleared entirely shortly afterwards. The son took up eagerly the responsibilities put on him by his father.

The father, in telling me the story, said that in his opinion his son's recovery was due to his getting a sense of being needed by his father when the father became injured. Previously, the son had been given a job more or less out of charity by the father. After the father's accident the father needed the son to help him because he could not do various things himself with his disabled hand. The son responded to this need which counteracted his sense of being useless when his brother had gone into the armed forces. No relapse had occurred in the 15 years following this recovery.

Wolberg briefly reported a similar instance of spontaneous recovery when a patient was asked to care for other patients with a consequent rise in her self-esteem (2).

Shifts in Motivations Brought About by Fear, Shame, or Desperation. Sometimes a progressively destructive course of behavior may be arrested by some event which shocks the patient into an awareness of the harm he does to himself and others.

A woman who had been drinking alcohol excessively for at least 6 years required a gall-bladder operation. Her husband, who was a physician, conspired with the surgeon to inform the patient after the operation that the surgeon had discovered in her liver the signs of early cirrhosis. The fear aroused by this fiction shocked the patient into complete abstinence which continued for the following 7 years, that is, to the time I heard the account.

Another alcoholic patient fractured his leg during a brawl when drunk. The leg healed slowly and kept him disabled for almost a year.

He thereafter remained a teetotaler for at least 10 years during which time he was followed by his physician.

A patient developed a phobia of buses so that he was obliged to walk to work. This phobia had arisen through a chain of associations from anxiety stimulated by the patient's wife. The patient did not tell his wife that he had become afraid of buses because he greatly feared her derisive laughter. He gradually became less afraid of his wife and more assertive with her, but persisted in his fear of buses. One day he was in the shopping district of his city with his wife when it was most convenient for them to return home on a bus. Rather than expose his phobia to his wife, the patient got into the bus with her and went home. Thereafter his fear of buses rapidly diminished and soon disappeared altogether.

CONCLUSIONS

The foregoing examples by no means exhaust the possibilities with regard to spontaneous recovery from the psychoneuroses. They may suffice, however, to show the existence of many opportunities for patients to have experiences apart from psychotherapy which can stimulate or facilitate new behavioral responses necessary for recovery.

Two implications from the study of such cases emerge. First, any satisfactory theory of the processes which enter into the origin of psychoneuroses and recovery from them must be capable of accounting for instances of spontaneous recovery. For example, it can no longer be maintained that de-repression of past painful experiences is a requirement of recovery, although this may under certain circumstances contribute to it. Nor can spontaneous recoveries be generally attributed only to the operations of suggestions from other persons, an interpretation which seems often to be implied in the use of the concept of "transference cure."

Secondly, these cases seem to establish further the value of life situations outside the therapist's office for experiences valuable in unlearning maladaptive behavior and learning new behavioral responses. This value justifies a careful study of them by therapists and encouragement by them of their appropriate exploitation as a means of accelerating recoveries from the psychoneuroses.

SUMMARY

1. Several independent studies of untreated psychoneurotic patients have shown that between 40 and 60% of such patients recover within a few years of the first observations of their conditions. Treated and untreated patients probably recover through the same processes which include and require the learning of new behavioral responses. We have some evidence that treatment which emphasizes the practice by the patient of new behavioral responses in periods between his therapeutic sessions will shorten the number of interviews required and possibly the total duration of the illness.

2. Examples are given from some 20 cases of spontaneous improvements or recoveries derived from observations or reports of patients, experiences of other persons, or published accounts of such recoveries.

3. The following circumstances or processes seem to facilitate recovery from psychoneuroses: (a) desensitization through recall, verbalization and assimilation of past painful experiences; (b) desensitization through association of painful experiences with new pleasurable experiences; (c) increased supplies of respect, reassurance, and affection; (d) entry into the patient's life of new models of behavior; (e) occurrence in the patient's life of new situations requiring different behavioral responses; (f) shifts in motivation brought about by fear, shame, or desperation.

4. Further study of so-called spontaneous recoveries from mental illnesses may teach us much more about experiences which prove valuable to patients. From this we may learn more about what we need to do to assist patients to recover more rapidly than they would without psychotherapy.

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CERTAIN SOCIOCULTURAL AND ECONOMIC FACTORS INFLUENCING UTILIZATION OF STATE INSTITUTIONAL FACILITIES IN INDIANA¹

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INTRODUCTION

This study is preliminary to a long-range investigative program concerning the following hypotheses: The process of identifying an individual as a psychiatric patient requiring institutional care is a function of social, cultural and economic factors in his environment. An individual from a culturally sophisticated and socioeconomically stable environment will be identified as a "patient" more probably because of inner distress and its socially eccentric manifestations. One from a less sophisticated milieu at the opposite socioeconomic extreme will be identified as a "patient" more probably because of behavior aggressively directed toward his environment. Another more familiar way of stating this hypothesis is that the environmental tolerance for and interpretation of individual behavior is closely correlated with those factors which influence or determine attitudes toward mental and emotional disturbance.

The State of Indiana is favorable for testing such hypotheses. The range of relevant social, cultural and economic variables is broad. In order to lay the groundwork for testing these and related propositions, a systematic description of Indiana's counties was developed. In the present report, certain county characteristics will be described as well as the patterns of their relationships within the state. It is the secondary purpose of this study to report certain relationships between these factors and annual admission rates to the state mental institutions.

Albee(1) has recently reviewed data for the United States at large which reveal no significant correlation between average first admission rates to state institutions and the

urbanization rankings of the states involved. His extremes include the 10 most highly and least highly urbanized states in the U. S. A. This national study points up a clear and direct correlation between state urbanization and *per capita* income on the one hand, and median years of schooling completed on the other. Locke and associates(11) conducted a study, not only of average annual first admission rates for all diagnostic categories, but also for those diagnosed as schizophrenic. This study of the Ohio State hospital system was for a recent 4½ year span. Data were analyzed along 2 major dimensions: metropolitan-nonmetropolitan, and high-low rates of hospital usage. These axes are partially reflected in the zonal analyses of state hospital admission rates. Carstairs and Brown(2) studied differential utilization of community psychiatric facilities shared equally by 2 contiguous regions in Wales, one a population-dense mining community, and the other a rural-agricultural community. The advantage of studying the impact of social and economic variables in instances where the available resources for psychiatric care are equally shared by differing regions is obvious. The relative isolation and legal provisions for admission within several state institution zones in Indiana made possible such a limited analysis with the present data.

There appears to be an inverse relationship between the number and range of pertinent descriptive variables selected and the cogency of meaningful inferences to be drawn concerning their selective contribution to institutional usage. Clausen(3) has emphasized that the number of significant, or near-significant, correlations between social, economic, educational and other local variables with hospital admission rates is very great indeed, but that our understanding of psychiatric disorders at this level is little enhanced by such data. He has stated

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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that it is not currently possible to specify clearly the relationship of prevalence of psychotic disturbances with any specific aspect of the environment along such social dimensions. He also expresses the opinion that the *interpretations* of statistical correlations are often made on a *post hoc* basis and yet presented as virtually self-evident. It is generally held that conclusions concerning the social determinants of serious emotional disorders can rarely, if ever, be drawn on the basis of any type of admission rate statistic. Such a tendency often intrudes in the most critically reported studies (13, 11, 2), but it militates against the objective interpretation of social factors. On another level, there is strong temptation for the worker in this area to infer generalization for one or another social or cultural determinant of disturbed behavior, while he stresses, paradoxically, the specifying conditions for its expression. The present study supports the conclusion that a relatively unique environment is required for the optimal expression of the social, cultural, or economic factors selected as variables influencing institutional usage or availability.

MATERIAL AND METHODS

The bulk of information used to categorize the various counties was derived from "Statistical Abstract of Indiana Counties" published by the Indiana State Chamber of Commerce, June, 1954. The following specific variables collected there were from the 1950 U. S. Census of Population: population density, percent urban population, occupation of employed workers, and school enrollment percentages by age groups. Information on average wage, which was incorporated in the economic index for each county, was obtained from official information releases published by the Indiana Department of State Revenue as of 1949. Data on farm operators, farm acreage and value, also included in economic index calculations, were obtained from the United States Census of Agriculture, 1950 (Counties and State economic areas, Indiana). Change in acreage value of farm property during the period 1950-1954 is reported in the 1954 Census of Agriculture of the U. S. Department of Commerce, Bureau of the Census, Washington (1956). Data on population

mobility in the period 1950 to 1956 were calculated from the Indiana State Board of Health, Division of Statistical Research, 1956, Population Release No. 3 (March 1, 1957). All calculated estimates of change were corrected for natural causes, that is, births minus deaths, for each county. The 1956 estimate of population from the same source was used as the population base for calculating annual admission rates for the period 1956-1957 and 1957-1958, while similar data from the 1958 population release were used as the base for calculating annual admission rates during the year 1958-1959. All data on admissions to Indiana state institutions were obtained from the Office of Statistical Research, the Indiana Division of Mental Health for each of the 3 years from June 30, 1956, to June 30, 1959. The annual admission rates referred to in this study include all admissions except for transfers between institutions. A certain percentage, therefore, represents readmissions during or between annual periods.

The selection of the school enrollment factor deserves special comment. In certain studies which survey social factors, the conventional statistic is median school years completed by persons 25 years of age or older. There are certain major limitations implicit in this statistic. The distribution is not sufficiently specified, and perhaps more importantly, the age of completion of schooling is neither indicated nor inferred. In clinical evaluation and prognosis, a much more useful indicator in our experience has been the school-enrollment status at age 16 to 17 years. Indiana state law requires all residents to continue formal schooling to the age of 16. County enrollment percentages show widest variations in this age interval. Moreover, since Indiana has many small colleges and at least 3 major universities, this variable successfully isolates artificial and discontinuous increments in school enrollment reflected in the age group 18 years and above. Actual percentage still enrolled in school in the age range 16 to 17 varied from 22.8% to 93.3% in the extremes counties.

The economic index calculated for each county was derived from 5 separate occupational, income, and farm value categories. The occupational categories included a high and a low status group. The high status

group was composed of professional, special technical, nonfarm managerial, and proprietor personnel. In the state at large, approximately 15% of all employed personnel, 14 years of age or older, were in this group (Group I). Group III included all those 14 years of age or older employed in domestic or other services, unpaid farm laborers, employed farm laborers, and other types of day laborers. In the state at large, approximately 20% of all employed were engaged in these occupational activities. The formula for calculating the economic index is as follows :

cupation, but also to wage and farm property evaluation. No attempt was made to weight the separate elements in this expression. Approximately equal emphasis was placed on occupational status and farm evaluation because Indiana is not only an active industrial center, but also, a rich and important farm state. The economic index for a county which very closely follows the over-all state trend will be approximately 5.0 while a relatively more prosperous county with high percentage in occupational status I and/or richer farming land will have an economic index less than 5. A county at

$$\begin{aligned}
 \text{Economic index} = & \frac{1}{\frac{I (\text{Total number}) \times 6.5}{\text{Total employed}}} + \frac{III (\text{Total number}) \times 5}{\text{Total employed}} \\
 & + \frac{3000}{\text{Average wage}} + \frac{(\text{Total Farm Owners} + \text{Part Owners}) \times 10}{\text{Average value of land and buildings/farm}} \\
 & + \frac{1.43}{\frac{\text{Average value farm land and buildings/acre (1954)}}{\text{Average value farm land and buildings/acre (1950)}}}
 \end{aligned}$$

The value 1.43 is the ratio of average values for farm land and buildings per acre for the state as a whole and for the years indicated.

Inspection of each component in this 5 factor sum reveals the single process of derivation. Thus, for the factor involving occupational Group I employed, that county which has the same proportion employed in this group as in the state as a whole, receives a numerical value of 1. If the proportion so employed is below the average for the state, the numerical value of the factor will be greater than 1, while it will be less than 1 in a county with greater than average representation in this occupational group. The factor dealing with the fraction employed in occupational status Group III is larger than 1 if the total so employed in this group for the individual county is greater than in the state as a whole, the value being less than 1 if the fraction is less than in the state as a whole. The remaining 3 factors are so arranged to be entirely consistent with the first 2. It will be noted that the economic index includes not only data relevant to oc-

the opposite end of the economic scale will have an index value higher than 5.0. The actual numerical value ranged from 4.29 in the most prosperous county to 8.68 in the least prosperous county with an actual mean of 5.50. The index figure has only relative ranking value and was used only for this purpose.

In preparing the descriptive items for statistical treatment, each of the 92 counties was rank-ordered along a number of dimensions. For the data of Table 1, rank-orderings were on the basis of population density per square mile, estimated population shift from 1950 to 1956, *etc.* For each variable, the counties were systematically ranked with the lowest ranking assigned to the lowest actual value for the variable. For example, the 92 counties were ranked from No. 1 (lowest population density per square mile) to No. 92 (highest population density per square mile). Along the dimension, estimated population shift from 1950 to 1956, the county ranked 1 showed the greatest net loss in population during the 6-year period, while the county ranked 92 showed

the greatest net increase in population for the same period. Similarly, as in Table 3, all counties were rank-ordered along the economic index axis from No. 1 (highest numerical value of the economic index) to No. 92 (lowest economic index).

In order to test for clustering of individual variables, Spearman Rank-Order Correlations were calculated for the 6 variables in Table 1, and the level of significance of intercorrelations justified the establishment of one combined urbanization variable and of 2 other unitary variables. In calculating significance of differences between means of Table 2, a conventional "t" test was applied.

For the data of Table 3, Spearman Rank-Order Correlations were calculated for within-zone variables with a conventional "t" test of significance for correlations used. A special technique for pooling rank-order correlations across zones with tests of correlation significance calculated as ordinary product moment correlation coefficients, and with degrees of freedom appropriate to the pooling, was applied.

OBSERVATIONS AND DATA

The 92 counties of the state were each described in terms of their rank order along the axes of population density per square mile, estimated population shift in the 6-year period 1950 to 1956, percent of population in urban areas, percentage of total employed in agriculture and manufacturing occupations, and the percentage in age group 16-17 years still enrolled in school. To explore homogeneous clusters of these variables, Spearman Rank-Order Correlations were calculated. These are summarized in Table 1. An inspection of this table reveals high level correlation between popula-

tion density per square mile, percent of population in urban areas, and percent of total employed in agricultural occupations. There is a somewhat lower level correlation of these 3 factors with the percent employed in manufacturing. Because these 4 factors appeared to form a crude correlation cluster, the individual rank-orders for each element were added, and the mean rank-order for the 4 variables was used as the measure of mean urbanization rank. The urbanization variable referred to in Figure 1 and in Tables 2 and 3 is, therefore, a combined factor. Estimated population shift during the interval 1950 to 1956 correlated significantly with all the urbanization factors, but at a consistently and significantly lower level, 0.3. This factor was, therefore, treated as a separate descriptive variable in subsequent analysis.

It is interesting to note that there was no correlation between the variable, percentage still enrolled in school aged 16-17, and any other variable noted. This absence of correlation was not anticipated, but, because of it, the school enrollment factor was treated as a separate social variable.

The economic index factor was not introduced into the correlation matrix of Table 1. Because this economic factor was a complex empirical composite, it was thought wise to treat it as a separate factor.

The 18 counties at each ranking extreme for urbanization, population mobility, percent still enrolled in school, and economic index, are plotted on a county map reproduced in Figure 1. It will be noted that the 18 most highly urbanized counties are distributed without pattern throughout the state. A cluster of highest-urbanization counties is seen in the northern (top) end of the state adjacent to the Gary-

TABLE 1
Spearman Rank-Order Correlations of Certain Characteristics: 92 Indiana Counties

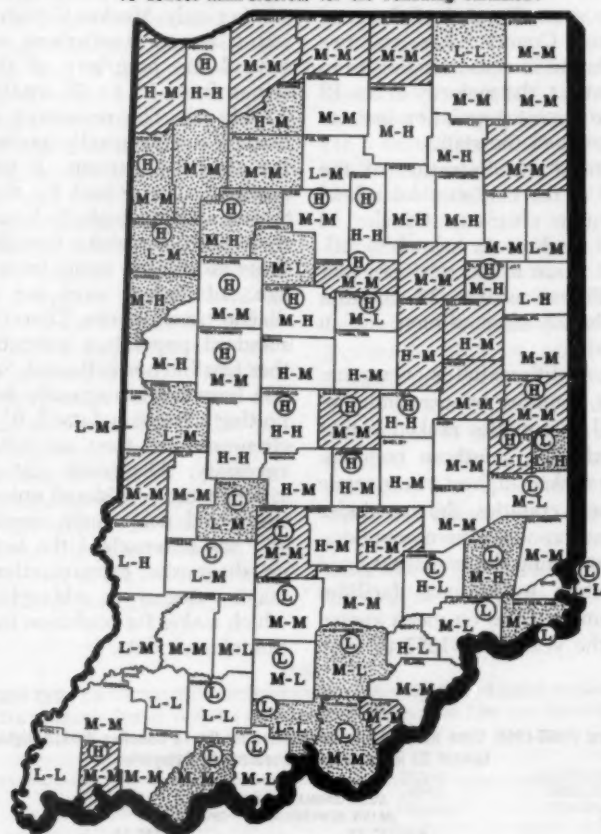
	POP. DENS. PER SQ. MI.	EST. POP. SHIFT 1950-1956	% URBAN	% AGRIC.	% MANU.	% 16-17 ENROLLED
Pop. Dens. per Sq. Mi.		.344	.925	-.886	.693	.135
Est. Pop. Shift 1950-1956			.281	-.294	.333	.113
% Urban				-.844	.660	.079
% Agric.					-.641	-.082
% Manu.						.048
% 16-17 Enrolled						

Hammond-Chicago steel mill region. Another loosely associated group extends across the central portion of the state following the historically important transcontinental trade route, and generally centered on the capital county of the state (Marion County), which, incidentally, is the third

most highly urbanized county. Two highly urbanized counties are distributed along the commercial Ohio River course in the extreme southern portion of the state.

A cluster of least highly urbanized agricultural counties is noted in the extreme northwestern portion of the state in the

FIGURE 1
Distribution of Those Indiana Counties Ranked at the Extremes (18 Highest and 18 Lowest Rank-Ordered) for the Following Variables:



- Urbanization: Highest 18-diagonal lined
Lowest 18-stippled
- Economic index: Highest 18-Circled H (Lowest numerical values)
Lowest 18-Circled L (Highest numerical values)
- Population mobility: Highest 18 (greatest net population gain)-H (at left of two-letter sequence)
Lowest 18 (greatest net population loss)-L (at left of two-letter sequence)
- School enrollment: Highest 18 (highest % of those aged 16-17 years still enrolled)-H (at right of two-letter sequence)
Lowest 18 (lowest % of those aged 16-17 years still enrolled)-L (at right of two-letter sequence)

heart of the state's richest agricultural area. The remainder of the counties ranked at the lowest extreme in urbanization are distributed irregularly through the central and southern portions of the state with a considerable number bordering the Ohio River.

There is a noteworthy geographical localization of the counties ranked at the extremes for population mobility. The majority of the 18 counties showing greatest net increase in population, that is, positive mobility, are in the central region of the state adjacent to Marion County. These counties had a net population increase ranging from 5% to 20%. In contrast, the majority of the 18 counties extreme for net population loss are along the perimeter of the state.

The geographical discrimination of the counties ranked at the extremes for school enrollment is quite clear-cut. Of the 18 counties ranked highest in school enrollment, all except 2 are in the northern half of the state. Fifteen of the 18 counties ranked lowest in school enrollment are in the southern half.

The north-south differential is even more conspicuous for counties by economic index ranking. All 18 counties ranked lowest in economic index are southern counties. Only 3 counties ranked highest in economic index are southern counties, the remainder being either junction or northern counties.

Inferences concerning the availability and utilization of state institutional facilities were drawn from statistics on mean annual state rates for the years 1956-1957 through

1958-1959. Annual admission rates for this 3-year period were averaged. No corrections were applied to transform these into standardized rates, nor were corrections for local variations in age or sex distributions within the relevant populations attempted. The institutions involved, to which data reviewed in Table 2 apply, include 7 state mental hospitals, one of which is a small, acute treatment and diagnostic center serving the entire state, and another, a state hospital serving only Marion County. The remaining 5 mental institutions are distributed around the periphery of the state. Each serves from 13 to 25 contiguous counties (Table 3). The remaining institutions include a small centrally located state facility for alcoholic patients, a northern and a southern state school for the mentally retarded, and one centrally located hospital for those with convulsive disorders. Patients in these institutions range from infancy to old age. Admissions were not subdivided by diagnostic categories. Therefore, age, sex, or standard population corrections were neither feasible nor indicated. Such corrections (8) have not infrequently been used in reporting admission data (5, 6), and in special circumstances, they are justified and even necessary. Diagnostic categorical subdivisions were considered unimportant to this study and notoriously unreliable. Gregory (5) has summarized the lack of consensus on diagnostic categorizations for such a major category as schizophrenic disorders, which makes for confusion in the interpretation of such data.

TABLE 2
Mean Annual (1956-1959) State Hospital Admission Rates for the 18 Counties Ranked Highest (H) and Lowest (L) in Selected Socioeconomic Categories

SOCIOECONOMIC CATEGORY	MEAN ANNUAL ADMISSION RATE (MEAN ADMISSION/10 ⁴ POPULATION)		SIGNIFICANCE OF DIFFERENCE OF MEANS
	HIGHEST 18	LOWEST 18	
1. Urbanization	99.0	103.0	n.s.
2. Population Mobility	93.0	93.0	n.s.
3. School Enrollment	84.0	107.0	Difference significant at <.01 level
(a) Mean Economic Index of Counties under 3 (See Text)	5.28	6.30	Difference significant at <.01 level

Two types of analyses were carried out. In one, the impact of extremes in socioeconomic and cultural variables on the utilization of available facilities was evaluated, assuming that local or zonal characteristics influencing case identification and admission were approximately homogeneous. Mean annual state institutional admission rates for the 18 counties ranked highest and lowest in selected categories are recorded in Table 2. For the 18 counties ranked highest and lowest in level of urbanization, the mean annual admission rates were virtually identical during this 3-year period. The population pool provided by the 18 counties ranked highest in urbanization was 2,660,000 in contrast with a pool 10 times smaller, i.e., 256,000 provided by the 18 least urbanized counties. There was likewise no significant difference in mean annual admission rates for those 18 counties ranked most positively mobile (with the highest positive influx of population) as contrasted with the 18 showing greatest net population loss. Since these extremes both reflect approximately equal but oppositely directed mobility, a critical analysis of the interaction of this factor with state hospital utilization is not possible (see Table 3 for a selective analysis). Among the 18 counties ranked highest in school enrollment, the mean annual admission rate is significantly lower than for the 18 counties ranked lowest in this variable. The mean economic index of the counties ranked highest in school enrollment was significant-

ly lower (higher economic status) than in the 18 counties ranked lowest in school enrollment.

At this juncture in the analysis it was proposed that the suggested differential utilization and/or availability of state hospital facilities on an educational-economic basis might be a zonal or geographic characteristic. Indeed, as already noted, the majority of high school-enrollment counties are in the northern half of the state and the majority of lowest school-enrollment counties are in the southern half.

To clarify the possible independent influence of the geographic factor, a separate analysis of mean annual admission rates for the 5 mental hospitals of the state serving a total of 91 counties was separately evaluated. These data are reviewed in Table 3.

Indiana state law requires that a person identified and accepted as a candidate for state hospital admission be admitted first to the state hospital serving his county. In rare instances, exceptions to this rule occur for Evansville, Madison, and Richmond. These 3 institutions accounted for approximately 31% of all state admissions during the 3-year period under consideration. The total admissions to the 5 institutions under consideration was 9,465, or 74% of all state institutional admissions. In the 3 state mental institutions referred to above, out-of-zone admissions ranged from .35% to 1.1% of all admissions during the period. It is evident,

TABLE 3
Spearman Rank-Order Correlations Between Mean Annual (1956-1959) State Hospital Admission Rates and Selected Socioeconomic County Variables: Within East State Hospital Zone and Pooled-Across Zones (See Text)

ZONE	N (NUMBER OF COUNTIES)	URBAN- VARIABLE	SCHOOL ENROLL. VARIABLE	POPULATION MOBILITY VARIABLE	ECONOMIC INDEX FACTOR
A. WITHIN ZONE					
L (Logansport)	21	.33	-.27	-.48*	.21
E (Evansville)	15	.26	-.21	.14	.40
B (Beatty)	17	-.24	.09	.08	.39
M (Madison)	25	-.18	-.65***	-.34*	-.26
R (Richmond)	13	.62*	-.45	.18	.26
B. POOLED-ACROSS ZONES					
	91	.04	-.39**	-.24*	.04

* $P < .05$.

** $P < .01$.

*** $P < .001$.

therefore, that only rarely are exceptions made to the state admission law in these institutions. Out-of-zone admissions are somewhat more common to Beatty Hospital which maintains a maximum security division for the entire state. During the 3-year period under consideration, approximately 9% of all admissions to this hospital were from out-of-zone counties. The Logansport State Hospital maintains an extensive treatment service for those with problems related to alcoholism, and 21% of admissions to this hospital were from out-of-zone counties.

In the within-zone analyses of Table 3, one outstanding characteristic is that the interaction of the various social and economic factor rankings with institutional admission rates is patterned in a relatively unique way for each state hospital zone. Consider the significant or possibly significant correlations first. In Zone L, for example, population mobility is inversely correlated with mean admission rate. This is true also of Zone M. The trend is not constantly maintained for Zones R, E, and B, and, in fact, is in the opposite direction though not at a level approaching significance. In the pooled, across-zones analysis, this factor appears to be a significant variable at the 5% level, and might, thus, suggest a general state trend. However, the within-zone analysis would suggest that the specific expression of this social factor is intimately dependent upon other regional variables. The same conclusion is justified with respect to urbanization. In Zone R, there is a significant positive correlation between mean admission rates and urbanization ranking, which trend is reflected in Zones L and E, but not in Zones M and B. The school enrollment rank-order is significantly and inversely correlated with mean hospital admission rate in Zone M, reflecting a similar over-all trend across zones. This trend is likewise confirmed by the extremes analysis of the impact of this factor summarized in Table 2. Even here, however, the variable expression of this factor is more clearly revealed when analyzed on a zonal basis. It would appear to be a variable of little or no importance in Zone B, for example, although the trend is generally confirmed in Zones R, L, and E.

An inspection of the data of Table 3 indi-

cates that the combined rank-order correlation patterns are individualized for each of the within-zone analyses. These patterns lend some support to the conclusion that the interaction and significance of such factors as related to the identification and acceptance of an individual as institutionalized patient vary widely with other local circumstances. Some of these patterns are, of course, simply chance fluctuations of the correlation statistic.

DISCUSSION

The data reported here could not be interpreted as reflecting the incidence or prevalence of any disorder justifying institutional management in the areas noted. Only a systematic sampling of representative populations, as, for example, that conducted by Cole and associates(4), could provide useful information on prevalence. Moreover, even with regard to those identified as patients in treatment, these data concern a limited sample of the total. Data on the total number of psychiatric patients in treatment are few. Hollingshead and Redlich(9) reported, for example, that 68% of those persons identified as under psychiatric treatment from the greater New Haven area were under such treatment in state institutions during the 6-month period of their study. One could quite safely infer from the relative distribution of treatment facilities available to the greater New Haven area, as compared with those available in the State of Indiana, that the relative percentage of the total under treatment accounted for by state institutionalized patients in Indiana would be unquestionably higher than 68%, but how much higher cannot presently be estimated.

Inferences concerning morbidity incidence from admission data would presume immeasurably more information than these data provide. Most workers(3, 11, 5, 6, 7, 10, 12) are thoroughly cognizant of this problem, and the matter requires no re-evaluation. It is becoming increasingly clear, moreover, that information concerning interaction of whatever social variables with admission rates, even in carefully circumscribed communities(7, 14), should be generalized only with great conservatism. It is worth noting that Locke and associates(11)

report a negative correlation between mean institutional admission rate and mean regional educational achievement for all diagnostic categories in their study of Ohio State mental hospitals. The present study would seem quite clearly to confirm this general conclusion. Nonetheless, the variable expression of the school enrollment factor on a zonal basis suggests that local circumstances may either enhance, reduce, or even neutralize the independent impact of this factor.

SUMMARY AND CONCLUSIONS

Indiana's 92 counties have been described in terms of certain social, cultural and economic variables.

1. Spearman Rank-Ordered Correlations of 6 of these variables justified the inclusion of 4 unit variables under a single composite category called the urbanization factor.

2. Net population change during the period 1950-1956 was isolated as a distinct variable which correlated at a low but consistent level with urbanization. No significant correlation was noted between a sensitive measure of county educational status (% of those aged 16 to 17 still enrolled in school) and the other social variables studied in the state at large.

3. Counties at the extremes of urbanization followed no recognized geographic patterns of distribution. Those counties extreme for negative population shift were generally located at the periphery of the state, while those showing maximum influx of population during the same period tended to be centrally located.

4. Counties with the highest percentage still enrolled in school were located in the northern half of the state, whereas, those showing lowest enrollment in school were distributed in the southern half of the state.

5. A similar north-south discrimination of counties at the extremes of economic status also was noted.

6. An analysis of the independent impact of urbanization on state hospital admission rates, presuming homogeneous distribution of equivalent resources, reveals no differences in admission rates for the 2 groups of counties at the extremes of urbanization. The lack of interaction here may well reflect the fact that the urbanization extremes stu-

died are insufficiently *extreme* to reveal an independent influence of urbanization, as has been shown in certain previous studies.

A similar analysis revealed no significant effect in those counties extreme for population mobility, but did indicate a significant inverse correlation between school enrollment and institutional admission rates.

A separate reanalysis of the interaction of these social variables with admission rates for each mental hospital, and its admission zone as a geographic and institutional unit, revealed that zonal admission rates were correlated in highly individual and specific ways with zonal socioeconomic and educational characteristics. A generalization justified by these data is that certain common sociologic variables, even at the extremes of a normal distribution, will find significant expression in their impact on the level of utilization of the state mental institution, only in a highly specific context.

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DISCUSSION

JOHN E. DAVIS, M.D. (Philadelphia, Pa.).—The present paper represents another step forward in the process of attempting to define and understand the complex social factors which are involved in decisions to seek psychiatric treatment. This search for significant parameters, other than the personal and the dynamic, is assuming greater and greater importance as psychiatry is confronted with exploding populations, migrating populations, back-from-the-suburb populations, and beatnik populations and as psychiatry is asked to take a social leadership role not only in alleviating the personal human and social distress which leads to mental illness, but in suggesting ways in which mental breakdown can be averted.

Perhaps it is a sign of confidence in the new drugs and the many other treatment methods that has enabled us to lift the horizon from the personal to the population as a whole, or perhaps it is with a sense of overwhelming despair that psychiatry realizes that considerable energy must be devoted to questions about those who come to mental hospitals. We know that it is not sufficient to have first class institutions without knowing a great deal about the characteristics of the population they are to serve.

The contribution of Dr. Nurnberger and his colleagues with this paper is, first, the derivation of an economic index by which to classify and compare populations. There are several difficulties with such indices. They are generally arbitrary, if well meant, and, in common with any classification scheme, they may obscure more significant but less noticeable real differences. If the index is intended as a preliminary tool with which to approach data, and if the tool itself remains as suspect as the data until established, then there is no real difficulty. Such indices do remind us that the tools of investigation in social psychiatry need as much research into as the object of the survey or research. Fortunately Dr. Nurnberger has given ample discussion as to the nature of the eco-

nomic index so that we can judge its appropriateness when we plan to use it in other investigations. Similar things could be said about the other dimensions of measurement used in the study.

One of the comparisons made by Dr. Nurnberger was between counties which showed high mobility, *i.e.*, moving in or out of the county, and showed no differences in mean annual admission rates. Since mobility has always been considered an important variable, it may be appropriate to report briefly on a Pennsylvania study of the Philadelphia area which is investigating the relationship between migration into the state and mental illness. We are finding that migrants into Pennsylvania from the North have a higher incidence of mental illness than migrants from the South, who in turn have a lower incidence of mental illness than Philadelphia natives. This fact obviously raises many, many questions.

Dr. Nurnberger, in turn, with his conclusion that "The significance of such factors as related to the identification and acceptance of an individual as an institutionalized patient, vary widely with other local circumstances," shows us the limitation of broad classification schemes which obscure important differences, and suggests that intensive study of local practice may be fruitful. He further cautions us against presuming more information than statistical data can provide.

In his careful study Dr. Nurnberger has indeed looked at his tools, his measuring devices, and his concepts. The fact that his regional statistics were in general confirmatory of other studies which reported negative relationships between larger regional institutional admission rate and educational achievement is tempered by his findings of possible differences on a smaller zonal scale between these two variables. Dr. Nurnberger has refined the tool, or the concept by which we measure education, he has perhaps suggested that such broad studies as this can illuminate the next step for investigation, and he may have warned us against over-generalizations.

THE FAMILY AS A POTENTIAL RESOURCE IN THE REHABILITATION OF THE CHRONIC SCHIZOPHRENIC PATIENT : A STUDY OF 60 PATIENTS AND THEIR FAMILIES ¹

ANNE S. EVANS, M.S.,² DEXTER M. BULLARD, JR., M.D.,²
AND MAIDA H. SOLOMON ³

INTRODUCTION

This paper is part of an investigation⁴ of the relative value of drugs on social therapies in the treatment of chronic schizophrenia and was undertaken at the Massachusetts Mental Health Center.⁵

The subjects were 60 inpatients from two Mass. State Hospitals all of whom had to be hospitalized at least 5 years continuously with a diagnosis of schizophrenia.⁶ There could be no diagnosis of organic deterioration or mental deficiency. All patients had to be between the ages of 25 and 50, without any imminent discharge plans. Selection of these patients was made by random sample from 136 patients at the 2 hospitals fulfilling the criteria of selection.

¹ Read at the 116th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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⁶ The specific diagnoses by the hospital staff were as follows:

Schizophrenic reaction, paranoid type	22
Schizophrenic reaction, catatonic type	13
Schizophrenic reaction, simple type	2
Schizophrenic reaction, hebephrenic type	1
Schizophrenic reaction, chronic undifferentiated type	22
Total	60

These chronic schizophrenic patients were brought to the Massachusetts Mental Health Center and treated there with tranquilizing drugs and social therapies or social therapies alone for 6 months, with the aim of rehabilitation and discharge(1). A control group remained at the parent hospitals. The improvement in many patients which seemed to warrant discharge did not always result in discharge. The success or failure of plans for discharge was often found to be dependent on the relationship between the chronic schizophrenic patient and his family.

The present report is a descriptive study of the factors that influence the relationship between the chronic schizophrenic patient and his family at the time of transfer. Portions of the data utilize material previously reported(2). Further studies involving the family's role during treatment at the Massachusetts Mental Health Center in the discharge or transfer back to the parent hospital and in the role of the psychiatric social worker at the Center are being reported elsewhere.

This report will present the patient's behavior on the ward and with his family, his social and occupational skills and his financial resources. The family will be examined in detail, including the home situation, the extent of the family's interaction with the patient and the family resources available to the patient.

The families in this study included families of orientation, families of procreation, and collateral relatives of these patients.

METHOD

The patients were transferred to the Massachusetts Mental Health Center beginning November, 1956, at the rate of 1 per week. They remained for a 6-month period unless discharged earlier. The patients remaining at the end of the 6 months returned to their previous hospital unless disposition plans

were in the process of being carried out. During the 6-month period at the Center the first 30 patients were treated with a combination of tranquilizing drugs (chlorpromazine and reserpine) and with intensive social therapies, which included psychotherapy, social casework, contact with students of various disciplines, occupational therapy and a rehabilitation program. The second 30 patients were not treated with drugs but received intensive social therapies alone.

Observations for this report were made on the patients and their families following the patients' transfer to the Center. The patients were interviewed by a psychiatrist and observed by a social psychologist to determine their psychiatric and social disability. Histories of their illnesses were obtained from the hospital records.

The families were interviewed by psychiatric social workers of the inpatient adult unit and research unit. Material included a social diagnostic evaluation of the family situation, and the research staff secured additional information from interviews with the social workers assigned to the cases. Supplementary data concerning the financial resources of the patients and families were obtained from the Department of Mental Health, Commonwealth of Massachusetts.

OBSERVATIONS ON THE PATIENTS AT THE TIME OF TRANSFER

As Richard York(3) points out, "the chronic schizophrenic patient has settled down to a minimum level of activity and social interaction . . . they have slipped into an isolated, anonymous, apathetic condition." These patients were no exception. They were distant and remained by themselves unless urged to join in a social situation. When approached, they were quiet and reserved showing little interest in further contacts, and permeating this isolation was a lack of initiative that hindered any expansion of their social relationships or activities.

Despite their failure to make social contacts, these patients often took care of their personal needs without help from the parent hospital. A majority (52%) maintained an acceptable level of dress and personal

appearance judged by community standards. More than four-fifths (87%) lived on open wards and went to the cafeteria for meals and to other parts of the hospital for activities. One-quarter of the patients made some use of privileges to leave the hospital during the day for walks, job hunting, or trips to the drugstore. Their work records also showed capacities and skills that were utilized in the hospital setting. More than one-quarter (28%) of the patients had a regular job in the hospital, and one-half worked at some daily ward task. All in all, a number of these patients took the major responsibility for their daily life routine and the parent hospital remained a place where basic living necessities were provided, rather than a place where a supervisory or therapeutic program was carried out.

This group of patients took little initiative in their relationships with their families. None was active in phoning, writing, or visiting their families, even patients with full privileges. One patient pretended indifference to his family, only to break down and cry when visited by his brother. When they were visited, or taken out for weekends by their families, the patients were usually docile and, though pleased, did not themselves take steps to continue the family contact. This seemingly indifferent attitude promoted the feeling among relatives and hospital staff that these patients were not ready for further activity and responsibility.

The other resources of these patients reflected the disabling effects of their disease as well as the effects of prolonged hospitalization. Only 1 of the 60 patients had any personal source of income or any savings, as might be expected after 5 or more years of hospitalization. Their job aspirations were limited since few patients had acquired a trade or skilled employment prior to their illness. At the onset of illness, more than one-third (40%) were still in school and only 7 patients had held a skilled job. Added to this, none of the patients held paying jobs during the long period of their hospitalization. Thus, even those with a good hospital adjustment were hampered by poverty, a lack of occupational skill, and little personal initiative.

OBSERVATIONS ON THE FAMILIES

Our material on the 60 families is presented under 3 headings: 1. The family situation; 2. The relationship between the family and the patient, specifically their attitudes toward the patient's illness and his possible release; 3. The family resources available to the patient.

1. *The Family Situation*: At the time of transfer to the Massachusetts Mental Health Center, four-fifths (48) of the patients had lost at least 1 parent, and one-third (22) had lost both parents. Only 11 patients had married prior to their illness, of whom 7 were legally separated or divorced. There remained only 4 patients with spouses who were available and legally responsible for the patients.

Despite the absence of parents and spouses, nearly all (57) patients had living siblings. This appeared to be a primary resource to the patient. Many siblings, however, lived outside the Metropolitan Boston area. For example, the family of Miss A, a middle-aged female patient, consisted of 2 married sisters, both of whom lived 75 miles away and had young children, making it difficult for them to come to the hospital. Finally, there were 3 patients who had no living relatives.

2. *Family Interaction with the Patient*: Noteworthy was that most of the families remained interested in the patient even after the prolonged separation. Four-fifths of the 60 patients were visited in the hospital by their families; three-quarters of the families visited regularly either once a week or once a month. The frequency of visits dropped off slightly after the patient had been hospitalized 13 years, yet a majority of these families also visited regularly.

Families' Perception of Illness: The families expressed varying opinions regarding the patient's illness. Twenty-five of the families were "hopeful" of ultimate cure. Three of these families did not believe that the patient was ill. For example, one family stated: "He doesn't really need hospitalization; I don't believe he's really sick—just too timid."

The rest of the families were optimistic as a result of the change of hospital and felt that the patient would be cured. "He's been sick for years. I think he'll get well now that he has been brought here. He'll get more attention." "She seems to be more interested in what is going on around her. I think she's better." "He certainly looks better. He talks to me and I can

TABLE 1
Family Visits in Relation to Length of Patient's Hospitalization

NO. OF YEARS HOSPITALIZED	NUMBER OF PATIENTS VISITED				TOTAL
	ONCE A WEEK	ONCE A MONTH	HOLIDAYS ONLY	NEVER VISITED	
5-12.9	24	12	4	8	48
13 and over	6	2	0	4	12
Total	30	14	4	12	60

TABLE 2
Families' Perception of Illness and Its Relation to Length of Hospitalization

LENGTH OF HOSPITALIZATION (IN YEARS)	"HOPEFUL"	DON'T KNOW	"HOPELESS"	TOTAL
5-12.9	22	13	5	40
13 and over	3	4	4	11
Total	25	17	9	51 *

* In 9 cases the families' opinions were unknown.

understand what he is saying." Seventeen families could not express a definite opinion regarding prognosis. One family said: "Maybe he can get better here but it will probably take a long time."

Nine families believed that the patient was incurable: "I don't think she'll ever get well." "He's been sick too long—They've tried everything. I don't think he'll ever get better."

If a patient was hospitalized more than 13 years, family attitudes tended to be less favorable about recovery. This feeling on the part of the family is in accord with studies(4) indicating that the prognosis for patients becomes worse as the length of hospitalization increases.

Family Attitudes About Release: A surprisingly large number of families favored release despite the passage of 5 years. More than one-third (23) of the families favored release. They said, "We want him home with us. He's been away too long." "Everybody wants him home." Two-thirds of those families who favored release felt that the patient had a "hopeful" prognosis. Of the 14 families who were ambivalent about release, one-half (6) were "hopeful"

about the illness. These families were "frightened" of the patient but were considering the possibilities of taking him home. They felt that "many new things had happened since the patient was last home," or were fearful of "outbursts." Thirteen families were against release. They either wanted the hospital to guarantee a complete cure or stated, "We have no place for her now."

As one might expect, a belief in cure was associated with a favorable attitude about release. One mother of a single female patient felt that her daughter's illness was curable and was anxious to have her at home. A small group of families opposed release even though "hopeful" about cure and, more significantly, a small group favored release even though feeling "hopeless" about the patients' prognosis. The families who frequently visited the patient were most interested in his discharge. Half of the families who never visited were against release.

The 40 families who favored or were ambivalent about release did not have unrealistic expectations of the patients. One-

TABLE 3
Relation of Family Perception of Illness to Their Attitude About Release

PERCEPTION OF ILLNESS	FOR	ATTITUDE TOWARD RELEASE		TOTAL
		UNCERTAIN	AGAINST	
"Hopeful"	17	6	2	25
Don't Know	4	5	8	17
"Hopeless"	2	3	3	8
	—	—	—	—
Total	23	14	13	50 *

* In ten cases the families' opinions were unknown.

TABLE 4
Relation of Family Visits to Their Attitude About Release

FREQUENCY OF VISITS	FOR OR UNCERTAIN	ATTITUDE ABOUT PATIENT'S RELEASE		TOTAL
			AGAINST	
Once a week	24		5	29
Once a month	10		4	14
Holidays only	3		1	4
Never visited	3		4	7
	—		—	—
Total	40		14	54 *

* In 6 cases the families' opinions were unknown.

half of the families required only that the patient be able to feed and clothe himself in the home.

3. *Available Family Resources: Financial:* The families in our study were found to comprise an extremely low income group. Financial resources were discussed with 42 families. One-half of these families made less than \$3000 annually. The median income of these families was \$2500 a year, which is considerably less than the national median family income of \$4971(5) a year.

Twenty-seven families stated that they would be able to assist the patient, 4 were able to assume complete financial responsibility and 23 partial responsibility.

Twenty families could not give any kind

of financial assistance. These families were also found to be unable to support themselves and derived their support from a variety of sources such as distant relatives, S. S. Benefits and Public Welfare.

Living Arrangements: The availability of living arrangements paralleled the families' financial situation. Of the 47 families who discussed living arrangements, a majority (27) stated that they could provide a place for the patient. Twenty-five families had room for the patients at home and 2 offered to subsidize an apartment if the patient was discharged. The remaining 20 families (one-third of the total group) could make no provisions for the patient.

Employment: Virtually no families were

TABLE 5
Attitudes of Families Who Were For or Uncertain Regarding Patient's Release in Relation to Patient's Sex

SEX	EXPECTATIONS OF FAMILY			TOTAL
	MINIMAL MAINTENANCE *	ASSISTANCE IN HOME **	PARTIAL OR COMPLETE INDEPENDENCE ***	
Male	6	2	6	14
Female	15	7	4	26
Total	21	9	10	40

* By minimal maintenance was meant that families expected the patient to feed and clothe himself.

** By assistance in the home was meant to help in the home, i.e., make beds, wash dishes, baby-sit, etc.

*** By partial or complete independence was meant that the patient takes over his or her former role, i.e., for the male to assume financial independence and for the female to take over the duties of the household.

TABLE 6
The Relation of Family Resources to Family Attitude

RESOURCES AVAILABLE TO THE PATIENT	PERCEPTION OF PATIENT'S PROGNOSIS			TOTAL	ATTITUDE TOWARD RELEASE		
	"HOPEFUL"	DON'T KNOW	"HOPELESS"		FOR OR UNCERTAIN	AGAINST	TOTAL
Financial :							
Yearly Family Income							
\$2000 and over	8	9	3	20	18	5	23
\$0-1999	11	6	3	20	14	5	19
	—	—	—	—	—	—	—
Total	19	15	6	40	32	10	42
Living Arrangements :							
Have room at home or could subsidize apartment	17	6	2	25	25	2	27
Can make no provision	7	8	3	18	11	9	20
	—	—	—	—	—	—	—
Total	24	14	5	43	36	11	47

Note: The totals represent the number of families whose resources and attitudes were known at the time of transfer.

able to help the patient gain employment. Only one family of the 38 who discussed this question felt they could help the patient get a job. Eleven other families said they would give the patient unpaid employment in the home but the remaining 26 families said that the patient or the hospital would have to assume this responsibility.

Recreational Activities: The family situation appeared more promising regarding recreational activities. This question was discussed with 23 families and 19 had outside social or religious affiliations in which the patient could take part. Four families said that they belonged to no groups or clubs but that they did entertain and would include the patient in their plans.

Regardless of income, one-half of the families were "hopeful" of cure and did not oppose release. Actually both groups tended to favor release even though they were not necessarily optimistic about the patient's prognosis.

The availability of living arrangements was associated with greater optimism and particularly a more favorable attitude toward release. Nearly one-half of the families who could not make provision for the patient opposed release and, more strikingly, 9 of 11 families opposing release could not provide for the patient themselves. In contrast, only 2 of the 25 families who could provide a room or place for the patient opposed release.

DISCUSSION

The present report has examined the family as a resource in the rehabilitation of the chronic schizophrenic patient. Many of these patients had successfully adapted to open ward settings and have fully utilized the available hospital facilities. Inherent in the nature of the patients' disability was a lack of initiative which prevented them from undertaking contact themselves with the community. We wondered whether this hospital level of functioning could not be extended to an increased interaction with the community. We found that the family is the primary resource available to the patient in the community.

A striking finding of this study is that

families continued to visit even after the patient had been hospitalized more than 5 years. When parents could no longer visit due to old age, illness or death, the siblings assumed this responsibility. One should not underestimate the strength of family ties even after prolonged separation. The nature of this bond and to what extent it involves affection, guilt and other feelings needs further investigation. Contrary to our expectations, the patient's age was not related to the frequency of family visits. One reason for this may be the limited age range of our sample, 25 to 50 years. The sex of the patient did not affect the number of family visits. An interesting sidelight was that casework interview material revealed that families expressed more fear of possible aggressive actions of the male patients than of the female patients.

Even after long-term illness the family for the most part continued to maintain a positive attitude toward the patient's illness and optimism about release. The family's minimal expectations of performance, in the event of release, was found to be in keeping with the patient's individual capacities. They realistically expected no more of the patient at home than they had observed in the ward setting. The authors believe that the hospital's expectations for discharge of the chronic patient are often higher than the family's tolerance for his disability. Under these circumstances, the hospital may not utilize the family's positive feelings as often as it could. The fact that more families of male patients expected them to provide financial assistance suggests a different approach in their rehabilitation. Rehabilitation of female patients should be oriented around a home situation and rehabilitation of male patients should include specific help toward a job situation.

The marked limitation of family resources suggests that some families cannot afford to have the patient at home. Economic necessity then becomes an important factor in disposition planning which must be considered together with the patient's clinical condition. Although differences in family attitudes did not appear to be related to their economic condition,

further help may be needed for those families with low income in order that they do not become terribly oppressed as a result of accepting the patient into their home.

These problems may be met in several ways. The hospital needs more psychiatric social workers to stimulate and assist the patients who have reached the stalemate of a successful open ward adjustment. Social casework with the family may enable them to deal more effectively with the problems of chronic schizophrenia. The worker can assist the family to make better use of the existing community facilities. There is a need for expanded community resources geared to the patient's increased interaction with the community. These might include greater financial aid to the family, increased use of family care programs(6), more half-way houses(7), and sheltered workshops. Even more important is the need for a positive attitude toward the possibilities of increased social effectiveness of the chronic patient by the psychiatric social worker, the hospital staff, social workers in the community, and the community itself.

SUMMARY

Sixty families of chronic schizophrenic patients undergoing treatment with drugs and social therapies were studied to determine their potential role in the patients' rehabilitation and discharge.

Many of these families maintained an active interest in the patients, expressed in continuing visits to the hospital. Their attitude toward the patient's illness was optimistic and many families favored discharge. Their expectations were realistic and in accord with the patients' capacities. Their ability to help the patient was compromised by a low annual income, insufficient room at home for another family member, and inability to help the patient find a job. The importance of the increased use of the psychiatric social worker and of additional community resources was emphasized.

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DISCUSSIONS

HERMAN DENBER, M.D. (New York, N. Y.).—It is difficult to make critical remarks about a paper with which one is in agreement on most points. Mrs. Evans and her collaborators have studied a problem of unusual importance to those interested in rehabilitation of the chronically ill; a problem becoming more and more urgent with large scale use of chemotherapy reclaiming many long-term residents of mental hospitals.

There is a small question concerning methodology: on page 2 it is stated that the report refers to the factors operating "at the time of transfer," while on the next page it states that "observations . . . were made . . . following the patients' transfer to the Massachusetts Mental Health Center." Further along it is stated that "this report will present the patients' behavior on the ward." It would be of interest to know exactly when and where these observations were really made.

In examining the description of the patient sample, one is struck with the fact that this is a prognostically hopeful group with 87% having been in open wards, and 25% being able to leave the hospital for various parts of the day. It is difficult to reconcile this active "motor" life with seemingly indifferent emotional attitudes to relatives: inertia in schizophrenia is usually all pervasive.

Very little can be added to the observations, except to say that a rather high percentage of families still maintained a positive feeling to their relatives in spite of the duration of hospitalization. This has not been our finding. Fully half of 20 chronic patients on the ward have had no visitors at all or only a rare relative or friend.

It is not unusual to find families utterly opposed to a patient's release. The latter has been written off, so to speak; their place in the household sequestered and belongings disposed of. The proposal of returning a patient to this environment is usually greeted by the family with a panic reaction. Yet it is surprising how intensive casework can occasionally convert this attitude to one of acceptance.

The authors have found that the family is the primary resource available to the patient in the community. While this is theoretically true, we must view such a hypothesis with care. If chronic patients are to be discharged from the hospital, an intensive multi-disciplinary project must be set into motion in which the family plays but a small role. In our setting in Manhattan State Hospital, where the therapeutic community project has aimed at discharging long-term patients, the family was found to be one of the weak links in the community and we have been dismayed often by their attitude. As a matter of fact, the psychopathological findings in families of long hospitalized patients are startling. This may be a function of case material, since our patients form a heterogeneous group.

It is stated that "the marked limitation of family resources suggests that some families cannot afford to have the patients at home." I think this is a screen for rejection of the patient. While we have occasionally found this to be true, more often it was used as a pretext when the patient was not wanted. It is usual that adequate arrangements be made for the patient's maintenance before separation from the hospital. Intensive rehabilitation procedures should make male patients (and female patients as well) ready for gainful occupation in the community. Why then must "further help be needed for those families with low income in order that they do not become terribly oppressed as a result of accepting the patient into their house?"

While "the hospital needs more psychiatric social workers," and "social casework with the family enable them to deal more effectively with the problem of chronic schizophrenia," this is not enough. Again, the accent here is placed in one small area when we must look at the total picture of which these are but small components.

What seems to be unsaid in this paper is the magnitude of the social problem confronting psychiatry with the thousands of chronically ill long-term residents of mental hospitals, many forgotten or abandoned by their families, and others without family ties at all. We are, perhaps, based on our own case material, less

optimistic than the authors about the potential of the patient's family in the rehabilitative process. But we would strongly and vehemently support their thesis for more effective casework with families during the patient's hospitalization and afterwards.

The low socio-economic status, low I.Q., and poor job training, *etc.*, all hinder effective mobilization of the chronic patient. The defective conceptualization of family ties in many layers of our 20th century American culture does not facilitate the stated task. For instance, it is doubtful if "greater financial aid to the family" will achieve the aims outlined by the authors. What is needed is an entirely new approach to the social and economic problems of our patients; this falls within the province of the political scientists, the sociologists and the economists.

The psychiatric social worker will render an optimum service to psychiatry by complete integration into the therapeutic force operating in the direction of the patient's health. Mrs. Evans and her co-workers deserve our thanks for highlighting a significant problem area. The positive attitudes they have formulated are worthy of emulation.

RUTH I. KNEE (Bethesda, Md.).—The current interest in the rehabilitation of chronic mentally ill patients, in discharging them from mental hospitals, and in finding some way for them to live in the community, has focused renewed interest in, and placed new significance upon, the patient's family. It has also meant a different approach to the family on the part of those who are responsible for the care and treatment of the patient, including the social worker. Traditionally, the social worker has been described as the link between the patient, the hospital, the family, and the community. There is something that is much more promising and challenging about using this intermediate position to find the positives in the family and the community and to make them available to the patient and the hospital, than there was when it appeared that the only, or major, use of the social worker was to make detailed studies in how the family had caused or contributed to the patient's illness. Her helping relationship with the family was largely used for the purposes of "interpreting the need for hospitalization and helping them to accept it."

The study reported is not an attempt to report on what was done in a few instances of successful casework which enabled families to help their ill members. Rather it is an examination of certain of the family resources in a

selected group of chronic schizophrenic patients who had been hospitalized for a number of years. It gives a cross section view of the attitudes of family members and the possible resources for rehabilitation that families offer to patients at one point in time. It does not attempt to tell us how these attitudes had come into being, what influence they had had upon the patient's illness and hospitalization in the first place, nor what happened to the patient as a result of the knowledge of the potential resources offered by the family. We are giving here a summary of the general kinds of possible contributions that the families of a group of long-term schizophrenic patients could make to their discharge and rehabilitation. These summarized data offer certain surprises and contradictions to some of the stereotyped ideas we might have about families. In spite of periods of hospitalization lasting many years, these patients were still visited by some member of their family. They had not been completely "forgotten." The families were accessible for interviews with the social worker and cooperated in the interviews and were still taking the initiative in keeping in touch with the patient. However, during the intervening years since hospitalization, there had been major shifts in family composition with death of one or both parents or divorce. Most of the family members considered the responsible relatives were siblings. Thus for most of the patients the concept of family did not mean the family of orientation or procreation.

Another surprise might be that in spite of the long hospitalization, a rather high proportion of the family members were hopeful of the ultimate cure and gave some indication that they would be willing to have the patient live with them. It would have been interesting to have had a similar study made at some time prior to the patient's transfer into the study group and of the control group. One would see how much families' attitudes of hope were related to the fact that the patient was receiving more intensive treatment than he probably had at any time before during his hospital career. It is also interesting to com-

pare these attitudes with those expressed during a study made of relatives' attitudes at a Veterans Administration Hospital—"Relatives' Attitudes and Mental Hospitalization." Most of the relatives interviewed in this VA study had a more pessimistic view about the patient's illness and were more reluctant to consider having the patient live with them. Perhaps there is a further clue to the reason for this contrast in the statement of the authors that relatives were much more concerned with the aggressive behavior of males than with females.

There were a number of areas in which the families appeared to offer minimal resources. The lack of financial resources of almost half of the families would make very difficult any arrangements to have the patient live with the family following hospitalization. The State was spending almost as much to give the patient custodial care as the family earned in a year. The lack of appropriate living space for the patient also minimized the families' potential as a resource. We wonder whether there had been changes in the family's economic status and employment level during the period of the patient's hospitalization or had this remained static. With those families having adequate financial means and living space, one wonders what kind of stimulation there would be in the daily living with a widowed parent as the established family of a sibling. It gives clues as to which families might be selected for more intensive help in planning.

This study illustrates that even after long-term illness the family continues to maintain some ties with the patient and looks to eventual discharge. However, the crucial test must still be what real support, either emotional or financial, can a sister or a brother give to a patient following his discharge from a hospital. In addition, there is strong evidence for the need of a variety of kinds of community supports, such as public assistance, living arrangements, social therapeutic clubs, that can provide for the patient the kind of help that the family is unable to give.

LOS ANGELES SUICIDE PREVENTION CENTER¹

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Suicide and suicide prevention provide major problems for clinical psychiatry and community psychiatry. Considering their importance, these problems have received relatively little organized study and attention. Although there exist in the United States and Europe several worthwhile anti-suicide services, conducted by philanthropic and religious groups, there have been no reports in English of comprehensive and systematic suicide prevention projects.

The purpose of this paper is to report progress in the development of a suicide prevention center (S.P.C.), staffed by psychiatrists, psychologists, and social workers. This work is being conducted in Los Angeles, and administered through the University of Southern California.

In addition to the primary goal of saving lives, which is shared with other anti-suicide organizations, the Los Angeles Suicide Prevention Center has 3 additional, unique goals: (a) to demonstrate the relationship between an S.P.C. and other community, mental health agencies; (b) to serve as a pilot project for other communities interested in establishing a suicide prevention program; and (c) to collect hitherto unobtainable, research data on the etiology, meaning, and prevention of self-destruction.

The principal activities of the S.P.C. are: 1. Providing intensive psychiatric, psychology, and sociologic investigation of some suicidal persons, leading to an evaluation of the person in his situation, with emphasis on the degree of suicidal danger; 2. Making appropriate therapeutic recommendations and referrals to these persons and obtaining periodic follow-up reports to observe the

progress of the cases; 3. Consulting with community agencies and practitioners confronted with special problems of suicide and exploring these special problems; 4. Collecting and analyzing data, leading to increased understanding of suicide and ideas for additional suicide prevention measures. These therapeutic, community oriented, and research activities proceed concurrently and harmoniously.

Our current strategy for suicide prevention work is derived from recent studies which showed that the great majority of persons who commit suicide make their intentions known in advance through suicidal threats, suicidal attempts or certain behavior patterns (such as the depressive syndrome or sudden increase in alcohol and barbiturate consumption). We have, then, a rather large group of potentially suicidal persons, which contains within it, as a relatively small sub-group, the majority of committed suicides. Very little is now known about the total number, range, and characteristics, of the population of potentially suicidal persons. We are using 3 methods to obtain these much needed data: (a) surveys of the community with questionnaire and interview techniques; (b) abstracting large numbers of charts from emergency hospitals, general hospitals and psychiatric hospitals; (c) the gradual accumulation of detailed case material at the S.P.C. In addition, we have collected information on suicidal victims through interviews with surviving relatives, friends, physicians, and other informants. We plan eventually to compare 4 groups: committed suicides, suicide attempts, suicide threats, and non-suicidal persons.

For example, we made a survey of all Los Angeles physicians for their experience with suicide attempts, receiving a gratifying 80% response. From these responses and reviews of the charts of several hospitals, we obtained identifying data (sex, age, race, marital status, occupation, location in the city, method, time, and outcome of attempt) for 2600 suicide attempts, representing a

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

Condensed version of the May, 1960, report.

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³ Co-Project Directors; this work has been conducted under a 5-year U. S. Public Health Project Grant No. OM-128.

sizeable fraction of the total (estimated conservatively to be 6,000 to 7,000) for Los Angeles in 1957. In selecting suicide attempt cases for intensive study, the S.P.C. has been attempting to duplicate proportionately the characteristics of the total group of suicide attempts. Many of our cases were seen in hospitals soon after a self-injury. Others came from a variety of referral sources, such as physicians, judges, social work agencies, and there have been a number of self-referrals.

At the S.P.C., case histories are obtained from patients and significant relatives and friends by the professional staff members, and a battery of psychological tests is administered. Much of the information obtained is coded and punched on cards for future analysis. We have been particularly interested in evaluating the degree of suicide danger through such indicators as the psychiatric diagnosis, the effects the patient's communication has on others, the meaning to the patient of his self-destructive behavior, the actual lethality of his behavior, the manifest anger, the self-image, the unconscious masochism, positive and negative reactions to therapy and so on. Possibly, with the aid of computing machines, we will be able to construct formulae for reducing these diverse and complex data to a few comprehensive indices of suicidal danger.

Until such formulations are developed, a discussion of this crucial problem, the assessment of suicidal potential, should be liberally spiced with case illustrations, which space limitations preclude. What follows, therefore, are a few highly condensed extracts from our clinical experiences.

Many persons who made suicide attempts or threats appeared to us to have a very low potentiality for suicide. In this group the patients were immature, passive-dependent, passive-aggressive, self-dramatizing individuals who simulated a suicidal mode of action in order to gain a point or manipulate a key person. The actions were impulsive, usually occurred in close proximity to other persons, often when anger would have been appropriate, and could have been a threat to life only by accident or miscalculation. Such persons usually have a record of chronic instability in their per-

sonal relationships and frequently can profit to some extent by family counseling and casework in social agencies. Then, the role of the S.P.C. has been to reassure the agency against the danger of suicide and act in the capacity of a consultant.

We encountered a number of persons whose suicide potential was moderate in that the risk of death depended upon the outcome of a very close, disturbed, ambivalent, interpersonal relationship. These mostly involved spouses or lovers but also included homosexual partnerships and parent-child combinations. In fantasies, these persons wanted to die but also wanted to be rescued and live. In suicide attempts, they often endangered their lives severely but also made provisions for being rescued, as if their danger was an ordeal or a trial of love or a gamble with death. We have been impressed by the durability of these ambivalent ties between people and how they resist change. Often both persons in the dyad are potentially suicidal. If such ambivalent but symbiotic interpersonal bonds are broken too abruptly, self-destructive actions can be anticipated.

High suicide potentiality was associated especially with severe depression, restless schizophrenia, and alcoholics who had exhausted their emotional resources. Suicide in such persons is seldom a matter of sudden impulse, and thoughts of suicide appear persistently in their interviews and psychological tests. The danger here is that the patient may be overlooked and returned to the community even after a suicide attempt. When the suicidal danger is evaluated as high, we have found no substitute for the safety and other therapeutic advantages of a psychiatric ward.

Resistance to the idea of psychiatric hospitalization is extremely common, both in patients and their families. We found that the sooner we interviewed a patient and his family, during a time of suicidal crisis and anxiety, the better, and we had to accustom ourselves to evaluating patients quickly and making emergency dispositions. The attitude of the relatives and family was often a decisive factor in the decision whether to hospitalize a patient or recommend ambulatory therapy. When there was no family or friends available, we have occasionally used

volunteer assistants to accompany a suicidal person to the hospital.

As we receive more and more telephone inquiries, the need for a 24-hour emergency psychiatric service emerged, and we have considered possible ways to institute such a program. So far, we have been able to use the panels of physicians set up by the medical associations who are available for emergency calls. During the first year of activity, the S.P.C. was in touch with well over 50 community agencies and resources in its efforts to help patients. We have received from other agencies numerous requests for information and brief consultation and acted as a referral service for many cases we did not see ourselves. We have been asked for consultation opinions on such issues as: what should a telephone operator or intake social worker say to persons who threaten suicide over the phone? How should a suicide occurring on a psychiatric ward be handled with the other patients and medical personnel? How can we predict when recovering suicidal patients are ready for discharge? We are working with the Los Angeles police department in a project to determine how many persons who committed suicide had previous contacts with the police. The Superior Court in charge of commitments has asked us to evaluate certain prospective commitment cases whose status was obscure.

One aspect of our work with community agencies deserves special mention. Dr. Theodore Curphey, the Los Angeles Coroner, deputized members of our project to assist him in investigating a large number of cases in which the mode of death was not clearly indicated by the physical evidence and routine police reports. He noted that only about two-thirds of the suicide certifications made in his office were based on absolutely unequivocal evidence and about one-third demanded some sort of psychological inference as to the intention of the victim. Similarly, there was another group of cases in which a certification of suicide might very well have been made but psychological inference led to a presumptive diagnosis of accident. He felt that psychiatrists and clinical psychologists could add a new dimension to the diagnosis of intention even in a dead person. Information from our

interviews with relatives, physicians, friends and other informants reviewed with the Coroner at what he calls "psychological autopsies" did indeed clarify the diagnosis in a number of cases.

Our reports confirmed previous observations that many accidents and homicides are closely related to suicide. We learned that a systematic bias on the part of the Coroner would substantially affect suicide statistics for any given community; that certain masochistic perversions can and do lead to death by asphyxiation or hanging; that most persons who play Russian roulette cheat; that persons who are taking large amounts of barbiturates over any extended period of time are living on the very edge of death and often slip over without quite meaning to; and that interviews which were primarily investigative often had secondary therapeutic benefits. Survivors of the deceased were able to express feelings and obtain information which reduced guilt and helped them formulate plans for solving problems, for example about the children of a parent who committed suicide. Noting this, the Coroner began referring distraught survivors of suicide victims to us for supportive interviews even when the mode of death was not in doubt.

CONCLUSION

Suicidal reactions represent a complicated synthesis of mental illness and interpersonal or social-living problems. Many potentially suicidal persons can be greatly helped by appropriate psychiatric treatment. Often pre-suicidal behavior is associated with strong defensive efforts (in patient and relatives) to deny the problems and avoid facing the illness. Opportunities to circumvent the resistance should be seized whenever possible.

Some benefits of a Suicide Prevention Center are:

1. Some pre-suicidal persons get appropriate treatment who might not otherwise get treatment.
2. Much needed data, especially longitudinal studies of the lives of pre-suicidal persons, are collected and analyzed.
3. The S.P.C. facilitates the functioning of a number of different agencies and com-

munity resources where they are concerned with suicide, leading to smoother handling of pre-suicidal persons.

4. The S.P.C. helps provide educational information for police, physicians, judges and others in a position to recognize pre-suicidal persons.

5. Proper publicity might help overcome the popular prejudice against psychiatric hospitalization.

6. The S.P.C. offers an opportunity for experimental activities such as psychiatric emergency call service and the use of supervised volunteers in emergency situations.

Finally, it should be said that there is

more to suicide than mental illness. In a sense, self-destruction reflects the relationship of the individual to his community and his civilization. It may be that a certain minimal level or rate of suicide is "built in" to our competitive culture, part of the price we pay for our prized individual freedom to dispose of our lives as we wish. As the Suicide Prevention Center develops we hope to increase our knowledge of suicide, sharpen our diagnostic accuracy and contribute answers to some of the questions we have raised, but as far as we can see into the future, suicide and suicide prevention will continue to present new problems.

THE EFFECTIVENESS OF PSYCHOTHERAPY ALONE AND IN CONJUNCTION WITH PERPHENAZINE OR PLACEBO IN THE TREATMENT OF NEUROTIC AND HYPERKINETIC CHILDREN¹

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INTRODUCTION

This paper will report the preliminary findings of a study comparing the effectiveness of three short-term treatment schedules, consisting of (a) psychotherapy alone, (b) placebo plus psychotherapy and (c) perphenazine plus psychotherapy, upon the response of each of 2 patient groups, designated as (I) neurotic and (II) hyperkinetic. The present study is one of a series³ designed to weigh the effectiveness of pharmacologic and psychologic factors in treatment of disturbed children. The plan of this experiment and the significance of its findings can best be understood in the context of a brief summary of the results obtained in a previous investigation.

PREVIOUS FINDINGS

By a double-blind study design, we contrasted the effectiveness of meprobamate (800-1600 mg.), prochlorperazine (20-40 mg.) and placebo in the treatment of disturbed children who received concurrent brief psychotherapy(1). Tables 1 to 3, modified from the original paper, summarize the principal findings.

TABLE 1—1959

Agent	Improvement		Total
	Significant	Mild or None	
Meprobamate	8	7	15
Prochlorperazine	7	12	19
Placebo	14	6	20
Total	29	25	54

Table 1 indicates the clinical outcome of patients on each of the 3 medication sched-

ules. It is clear that the results provide no evidence for superiority of either drug to placebo. Indeed, it appears that patients on prochlorperazine did less well than those on placebo. This finding may correlate with the 30% incidence of side effects from prochlorperazine, which was twice that from meprobamate and four times that associated with placebo.

Since we had anticipated that patient response might be a function of psychiatric reaction type(2), we examined the response within each of the major diagnostic categories we employed. The diagnosis neurotic was made in those cases in which the manifestations of, or defenses against, anxiety were predominant, in accordance with APA nomenclature. It should be emphasized that some of these children might have been classified under the rubric: adjustment reaction of childhood, neurotic traits. The duration of the symptoms—6 months to 2 years—made it difficult to consider these as transient situational reactions, although this appears to be common practice in mental hygiene clinics(3).

Children who were overactive, distractible, non-conforming and disturbing to others, but who showed little or no anxiety, were classified as hyperkinetic. It should be noted that children with sociopathic behavior were *not* included in this category.⁴ Table 2 reveals the similarity of the response within each of the diagnostic categories to each of 3 treatment schedules.

In view of the lack of evidence for specific therapeutic action by either of the drugs, it appeared justified to sum the treatment subgroups in order to examine diagnostic category as a variable relevant to outcome. When this was done, the marked difference between the response of neurotic and hyperkinetic children was revealed, with 70% of

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⁴ The 10 sociopathic children in the original study showed the least response to the treatment program(1).

TABLE 2—1959

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
Meprobamate	4	0	4
Prochlorperazine	3	5	8
Placebo	8	1	9
Hyperkinetic			
Meprobamate	4	7	11
Prochlorperazine	4	7	11
Placebo	6	5	11

the former and only 40% of the latter showing significant improvement. The chi square for Table 3 is 4.34, corresponding to a probability value of less than 0.05.

TABLE 3—1959
Response as a Function of Diagnosis

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	15	6	21
Hyperkinetic	14	19	33
Total	29	25	54
$\chi^2=4.34$		$p<0.05$	

The lack of an untreated control group precludes any conclusion as to whether the response was "spontaneous" or "therapeutic." But there is evidence of a relationship between diagnosis and outcome and none for a pharmacotherapeutic action of either of the drugs studied.

It was of interest that the favorable response of the neurotic cases was maintained at re-evaluation 1 month and again 7 months after the termination of treatment. Preliminary results (unpublished) from an 18-month follow-up study of the original patients show maintenance of improvement in the neurotic group but a gradual loss of even the lesser gains obtained by the hyperkinetic group.

It therefore seemed to us to be of interest to examine the following questions: Could the finding of a predictable difference in outcome as a function of diagnosis be confirmed? Was the apparent therapeutic response dependent upon placebo administration or could it be obtained with psychotherapy alone? Would a new agent, perphenazine, prove to be more effective than placebo?

METHOD

In order to investigate these questions, we employed the following procedure. Patients were assigned randomly to one of 3 treatment schedules: (a) psychotherapy without medication (b) psychotherapy plus placebo (c) psychotherapy plus perphenazine (8-16 mg.). It was not possible to conceal from the therapists the patients not receiving medication, but they did not know which patients were on placebo and which on perphenazine. For those cases who received "medication," the number of capsules prescribed was increased by 50% and later by 100% if no improvement was noted at the 1 week and 3 week examinations, respectively.

The treatment program, described in detail in the original publication(1), consisted of 5 sessions: an initial 60 to 90 minute evaluation by a social worker who saw one or both parents and a simultaneous interview with the child by a psychiatrist, plus 4 half-hour treatment sessions for both parent and child at 1, 3, 7 and 11 weeks after intake. After the 7th week session, all medication was discontinued in order to permit a final evaluation of behavior without medication.

Improvement scores were based upon the mother's report to the social worker, an independent assessment obtained from the school, and the psychiatrist's impression from observation of the child. In our previous study, we had found significant correlations between each pair of these 3 scores. In the present study, with a more scrupulous effort to have the psychiatrist make his evaluation without knowledge of the mother's or the school's report, the psychiatrist's score was found to be at variance with the home and school scores, whereas the home and school scores remained highly correlated. The final decision as to improvement was made jointly by the psychiatrist and the social worker from a review of the available information from home, school and clinic, with greater weight given to home and school information than the impression gained from the clinical interview.

Improvement was scored as "significant" when symptomatic change was sufficient to permit the child to effect a more satisfying interpersonal adjustment and as "mild"

when amelioration of symptoms occurred without a meaningful change in adjustment. For clarity of presentation, the category of significant improvement has been contrasted with a combined category representing both mild improvement and no change. This, in essence, imposes a demand for unequivocal change before a patient is classified as improved.

As an independent check on the prognostic implication of the diagnostic categories, 17 neurotic and 15 hyperkinetic cases, treated at the parent clinic by conventional outpatient psychotherapy during the same time of the year (2) as the experimental patients, were randomly selected from the files of the Children's Psychiatric Service. Assignment to diagnostic category was based upon a study of the initial history and examination. After this determination had been made, the treatment interviews were examined at intervals corresponding to those employed in the experimental study in order to determine improvement.

RESULTS

The data were first examined by diagnostic category. Table 4 indicates the response distribution for the experimental group at the 7th week. Two-thirds of the neurotic cases as opposed to one-third of the hyperkinetic cases demonstrated significant improvement, a difference significant at better than the 0.05 level of confidence.

TABLE 4—1960
Response as a Function of Diagnosis
Experimental Subjects

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	21	12	33
Hyperkinetic	8	15	23
Total	29	27	56
$\chi^2=4.73$		$p<0.05$	

A separate analysis of the record search of the clinic treatment cases, in Table 5, reveals similar but even sharper findings: 70% improvement among neurotic versus 15% among hyperkinetic cases.

Both the experimental and the clinic cases confirm our hypothesis that the diagnostic differentiation between "neurotic" and "hyperkinetic" is a meaningful predictor of out-

TABLE 5—1960
Response as a Function of Diagnosis
Clinic Service Cases

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
Neurotic	12	5	17
Hyperkinetic	2	13	15
Total	14	18	32

$p<0.01$ by Exact Test from an extension of Finney's Table by R. Latscha (Biometrika 40, parts 1 and 2, June 1953).

come in patients receiving brief outpatient treatment.

In order to assess the effect of placebo administration on the impact of psychotherapy, Table 6 lists outcome for the experimental group by diagnosis and by treatment schedule. There do not appear to be any notable differences between the 2 treatment schedules, although the numbers are small and the finding cannot be considered as firmly established for this reason.

TABLE 6—1960
Response as a Function of Diagnosis and
of Treatment in Experimental Subjects

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
1. Psychotherapy Alone	8	5	13
2. Psychotherapy plus placebo	8	4	12
Hyperkinetic			
1. Psychotherapy Alone	1	6	7
2. Psychotherapy plus placebo	1	4	5

The homogeneity of the response rates in these 2 non-drug groups appeared to warrant combining them into one category for contrast with the drug group in Table 7.

For the neurotic patients, perphenazine appears to offer no advantage over the psychotherapy or placebo schedule. It should be borne in mind, however, that the improvement rate in the neurotic patients is so near ceiling in the placebo comparison groups that a drug would indeed have to be highly potent for its effect to be manifested.

For the hyperkinetic patients, however, there does appear to be a suggestion of

TABLE 7—1960
Assessment of Perphenazine

Diagnostic Category Agent	Improvement		Total
	Significant	Mild or None	
Neurotic			
1. Perphenazine plus psychotherapy	5	3	8
2. Psychotherapy with or without Placebo	16	9	25
Hyperkinetic ⁵			
1. Perphenazine plus psychotherapy	6	5	11
2. Psychotherapy with or without Placebo	2	10	12

benefit from perphenazine beyond the placebo effect. A current double-blind study of perphenazine and matched placebo in hyperkinetic patients should serve to provide more definite information.⁵

TOXIC REACTIONS

Complaints about side effects were noted in 6 of the 19 patients on perphenazine and in 2 of the 17 on placebo. Seven of the 8 complaints were limited to drowsiness which remitted without change in dosage. The one toxic reaction of consequence occurred in a hyperkinetic child on perphenazine; he developed torticollis and marked drowsiness, both of which disappeared when the dose was reduced from 8 mg. to 4 mg. per day.

DISCUSSION

In two experimental investigations and one retrospective study, a significant difference has been demonstrated in the clinical response of children with "hyperkinetic" and "neurotic" reaction patterns. The regularity of the finding is emphasized in Table 8 in which the clinical results from the 3 studies are summarized. With the possible exception of the hyperkinetic service patients, about whom we shall comment in a

later paragraph, the mean improvement scores for each reaction type are strikingly consistent from one study to another.

TABLE 8
Three Studies Contrasted

Diagnosis & Study	Improvement Category		Improvement Mean-Score
	Significant	Mild or None	
Neurotic—1959	16	5	1.7
Neurotic—1960	21	12	1.5
Neurotic—C.P.S.	12	5	1.6
Hyperkinetic—1959	14	19	1.1
Hyperkinetic—1960	8	15	1.1
Hyperkinetic—C.P.S.	2	13	0.5

If we combine the results of the three studies, a step that would appear permissible in view of their similarity, it can be seen in Table 9 that the 2 syndromes behave in almost diametrically opposed fashion. The chi square for the table is 16.78, which is highly significant ($p < 0.001$).

TABLE 9
Three Studies Combined

Diagnostic Category	Improvement		Total
	Significant	Mild or None	
All Neurotic Cases	48	23	71
All Hyperkinetic Cases	24	47	71
Total	72	70	142
$X^2 = 16.78$		$p < 0.001$	

It might be contended that the magnitude of the difference, though great, is simply an expression of the investigators' anticipations which unwittingly colored their evaluations of change. Three considerations militate against this possibility. First, we did not anticipate this sharp difference in outcome at the time of the first study, whose findings became evident only when the results were tabulated. Second, the several residents who treated the service cases were not familiar with the hypothesis. Third, the difference in outcome was clearly evident in the school teachers' ratings of both experimental groups.

The predictable relationship between outcome and reaction type emphasizes the importance of diagnosis(4). It may well be that one factor in the disenchanting results regularly obtained in efforts to evaluate outpatient treatment(5) arises from the failure

⁵ Thus far (Jan. 1961), 39 additional hyperkinetic subjects, 19 on perphenazine and 20 on placebo, have been processed in this new study. An analysis of the results indicates that the "suggestive" findings noted above were a function of random variation; when the 39 new patients are added to the 23 reported in this paper, the outcome of the placebo series is identical with that of the perphenazine series. These findings will be reported in greater detail(13).

to contrast treated and untreated cases within each diagnostic category rather than for a heterogeneous assemblage of patients whose initial diagnostic characteristics are not segregated (6). If our findings are valid, then it is clear that mere differences in the proportions of hyperkinetic and neurotic cases assigned to treatments x, y and z could result in entirely spurious evidence in favor of one over another.

The poorer outcome of the hyperkinetic children treated as service cases as compared with those in the experimental study may, of course, be an adventitious difference. However, a study of the drop out rates is instructive in this regard. As might be anticipated, the drop out rate for neurotic cases did not exceed 5% in any group. However, the rate of drop outs for the hyperkinetic cases by the third month was 60% for the service cases whereas it was less than 10% for both experimental groups. It is our clinical impression that this difference resulted from the emphasis on time-limited and goal-limited therapy in the experimental study as contrasted with the conventional open-ended approach. This suggests the unsuitability of the model of the treatment of neurosis in the approach to the treatment of hyperkinetic syndromes.

The indifferent response of hyperkinetic children to short-term psychotherapy with or without accompanying placebo may reflect the presence in this group of a core of cases with an organic syndrome of "constitutional" or traumatic etiology (7). It is significant in this regard that Pasamanick and his co-workers (8) have found a higher incidence of complications of pregnancy and parturition in the birth records of children with behavior disorders, a finding that was most striking for those cases classified as "hyperactive, confused, and disorganized." Moreover, O'Neal and Robbins (9) found a much higher rate of adult psychiatric disability in the later careers of children with aggressive behavior disorders than of neurotic children, although their categories and ours do not correspond completely.

It would appear that hyperkinetic children are a population at risk for psychiatric disability and yet are less likely to be taken on as treatment cases by most child psychiatry clinics because of their unsuitability for

the preferred mode of treatment; namely, psychotherapy (10). This highlights the importance of research with a variety of treatment methods, among which pharmacotherapy would appear to have a high priority. Rather than contenting ourselves with treating what we know how to treat but may be less in need of treatment, we should search for methods of reaching those who seem refractory to present techniques and constitute a reservoir of psychopathology (10).

Our results with the neurotic reaction patterns are consistent with the general clinical impression of the effectiveness of outpatient therapy for psychoneurosis. We are currently investigating measures to provide a comparable untreated control group of neurotic patients in order to assess the extent to which spontaneous remission of symptoms may account for these findings. But, at the least, the good symptomatic result from short-term therapy, sustained at re-evaluations 6 and 18 months after termination of treatment, suggests the desirability of a short-term focus in mental hygiene clinics in order to reach a larger number of patients than is possible when long-term treatment pre-empts scarce professional time (11).

Indeed, it is conceivable that long-term therapy for all but severe psychiatric disorders may increase disability by fostering dependency and by permitting, if not encouraging, the patient to focus on pathology. Other studies have indicated that a time limit hastens the therapeutic process (12), perhaps by necessitating an emphasis on the mobilization of assets. In essence, the patient and his family are being encouraged to assume responsibility, and are being reassured as to their competence to do so, by the emphasis on time-limited treatment.

The prompt and usually satisfactory response of neurotic cases to brief psychotherapy leaves little room for any but the most remarkable drug to demonstrate its effects. Whether drugs or placebo alone might be effective where even brief psychotherapy is unavailable is a question that deserves exploration although it is methodologically difficult to exclude the impact of the doctor-patient relationship. On the other hand, it is clear that the unsatisfactory results with the hyperkinetic behavior disorders necessitate

a search for pharmacologic and other therapeutic agents. We are in the process of extending our current suggestive findings with perphenazine by pursuing its use in a larger series of cases and are inaugurating a study of agents with contrasting chemical properties.

SUMMARY

Pediatric patients with neurotic and hyperkinetic reaction patterns have been treated experimentally on one of 3 schedules: (a) brief psychotherapy, (b) brief psychotherapy plus placebo, (c) brief psychotherapy plus perphenazine. Analysis of the clinical response rates has led us to the following conclusions:

1. Children with neurotic symptomatology show a prompt and enduring response to a brief program of psychotherapy at a level of improvement (60-70%) that is significantly greater than that attained by children with hyperkinetic syndromes (15-40%).

2. No evidence was obtained for any enhancement of the response to brief psychotherapy from the addition of placebo medication.

3. We were unable to demonstrate a significant difference between response to placebo and to perphenazine when administered concomitantly with psychotherapy.

The implications of these findings have been discussed.

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A RESEARCH MODEL FOR THE EVALUATION OF THE EFFECT OF PSYCHOPHARMACOLOGICAL AGENTS¹

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PURPOSE OF STUDY

The purpose of this study was to determine the therapeutic effectiveness of a new psychopharmacologic agent, a pipiridyl phenothiazine, No. 2445, in the treatment of chronic schizophrenic patients who exhibit various degrees of withdrawn behavior. The study was also designed to demonstrate the feasibility of collaboration between a central research bureau and the service staff of a state hospital.

METHOD OF STUDY

The series included 47 patients, 23 males and 24 females, with a clearly established diagnosis of schizophrenia. Their ages ranged from 24 to 68 years. Chronicity, in terms of hospital residence, ranged from 2 years 3 months to 38 years 6 months. This biased sample was divided into 2 subgroups of 16 patients each, 8 males and 8 females, and one subgroup of 15 patients, 7 males and 8 females. (This third group, diagnosed as Group I, or mildly withdrawn, had its 8th male drop out at the beginning of the study because of persistent weight loss during the baseline evaluation). The 3 groups represented degrees of withdrawn behavior in terms of the following criteria: Group I—mild, Group II—moderate, Group III—severe.

The selection of the patients was made by going through various wards, speaking with ward personnel, interviewing patients and choosing those who would best fit the desired categories. Their records were then checked to assure that the diagnoses and length of hospital stays fitted the needs of the experimental design. In this way we felt our selection of patients was more accurate.

The design included 5 phases: Phase I—baseline studies; Phase II—comparison of placebo and active treatment groups; Phase III—active treatment of all patients; Phase IV—reinstitution of a comparison of active treatment and placebo groups; Phase V—post-treatment evaluation.

Phase I. Baseline studies were conducted after the patients had been off all medication for 1 month. These studies were continued over a period of 2 months during which the patients were still off medication, and a second baseline rating was made at the end of this time.

The studies included observations made by psychiatrists, nurses and psychiatric technicians, and laboratory determinations by laboratory technicians. The psychiatrists were responsible for the psychiatric, physical and neurological evaluations. They also completed the Wittenborn Psychiatric Rating Scale, the Wittenborn Supplement for Chronic Schizophrenic Patients and the Standard Mental Status. The nurses were responsible for physiological studies such as TPR, blood pressure, weight, appetite, sleep and bowel habits. In addition, the nurses and psychiatric technicians made the observations for the Burdock Ward Behavior Rating Scale. Two sets of these ratings were made at each evaluation period. They were made independently for each patient by a nurse and a technician.

Phase II. At the start of the treatment period, one-half of the patients, Group A, were given the active compound 2445 and one-half, Group B, received the identical-appearing placebo. This was administered by double-blind procedure so that 50% of each subgroup received the active compound. The dosage schedule for the first week was 20 mg. b.i.d.; the second week, 20 mg. t.i.d., increased to 40 mg. t.i.d. for the remaining 6 weeks of this treatment period. At the end of this 8-week period, all baseline studies were repeated.

Phase III. All patients received the active

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compound for 16 weeks. During this phase the dosage schedule was gradually increased to a maximum dose of 80 mg. t.i.d. for a period of 2 weeks, a total of 240 mg. daily, then reduced for 2 weeks to a dosage of 60 mg. t.i.d., and for the remainder of this period a dosage of 50 mg. t.i.d. was maintained. During this period of active treatment of all patients, the total daily dosage varied from 120 mg. to 240 mg. with all patients maintained during the final 4 weeks of Phase III on a total daily dosage of 150 mg. At the end of this period all baseline studies were repeated.

Phase IV. The original active treatment and placebo groups were reinstituted on a fixed treatment schedule of 50 mg. b.i.d. for Group A. At the conclusion of this phase, all baseline studies were repeated.

At the conclusion of Phase IV Group A had been under continuous active treatment from September 9, 1959 until April 8, 1960, or approximately 7 months. Group B had been on placebo treatment for 8 weeks, on drug treatment for 16 weeks, and on placebo treatment for the final 4 weeks.

SIDE EFFECTS

The most noticeable side effect was extrapyramidal symptoms manifested mainly by rigidity of extremities, masked facies, slow deliberate gait, retardation of verbal responses and increase in salivation. These symptoms were observed in 10 of the 16 female patients in the mild and moderate groups during the period when all patients were receiving maximum medication.

One Group A male patient classified as mildly withdrawn, developed oculogyric crises during the initial medication period. This was controlled by Akineton. This same patient was off medication for 2 days prior to Phase IV and following his second dosage of 50 mg. of the drug he again developed oculogyric crises. This, I believe, can be attributed to an individual idiosyncrasy to the drug.

One Group B female patient classified as moderately withdrawn, had a reactivation of an acute catatonic stupor which required force feeding. This reaction set in after Phase III when all patients had been receiving medication. The reaction of this patient was so severe that she remained in

a kneeling, prayerful position most of the time and it was necessary to remove her from the project.

In the severely withdrawn and older age group, 3 Group B, or placebo group, female patients died as a result of severe respiratory disease during an influenza epidemic. One Group A female patient diagnosed as mildly withdrawn had a kyphoscoliosis and died during the same epidemic. Post-mortem examination on this patient revealed a very poorly developed cardiovascular system.

RESULTS

Physiological. Among the women in both Groups A and B there was a general and moderate leucopenia varying between 500 and 1000 reduction of the white blood cells. This was revealed in the testing period at the end of Phase III when all patients were on active treatment, and was apparent rather than real.

Metabolic and Biochemical. There were no significant changes in weight, blood pressure, sleep patterns, appetite or bowel habits in any of the patients on the physiological evaluations. One male patient in Group A showed a persistent 1 to 2+ sugar in the urine. However, all of his blood sugar determinations were within normal limits. Liver studies showed no essential changes.

Neurological. The only neurological findings were extrapyramidal symptoms described under Side Effects.

BEHAVIORAL

1. Burdock Ward Behavior Rating Scale. This Scale provides a measure of severity of illness and an index of response to treatment for mental patients. The Scale consists of 150 items drawn from 3 categories of observation. These categories are appearance and deportment, behavior in verbal context and adaptation to ward routine. The items were constructed so as to reflect observable units of behavior. They describe such activities as facial expression and grooming, eating and toilet habits, physical status, attitudes, cooperativeness, communal, vocalization and speech patterns, interpersonal relations, hostility, or aggressiveness, mannerisms, affect and special symptoms.

Two baseline Ward Behavior Rating Scales were completed making a total of 5 such ratings. At each of the 5 periods 2 ratings were received for every patient, from 2 different observers. Ratings for the male patients averaged 90% reliability and for the female patients 85% reliability.

Among the males, there was a significant rise in the mean scores of Group A from the first to the final rating. Group B similarly showed a significant rise in the mean scores from the second rating period (end of placebo treatment) to the fourth rating period (end of drug treatment). Among the females the differences between these rating periods were not significant. However, over the various periods a slight trend to increase mean scores is apparent among Group A, whereas the mean scores for Group B fluctuate, showing no consistent trend.

The item analysis on this rating scale is as yet incomplete. We therefore do not know the areas in which improvement occurred.

2. Clinical Evaluations by Doctors and Nurses. Clinical evaluations were made at the end of Phase III, the period during which all patients received the drug, and at the end of the study. At the end of Phase III 2 female patients in Group A were rated much improved. At the end of the project one of these patients was rated as being worse because of increased aggressiveness on the ward. At the end of Phase III of 4 female patients in Group A rated as slightly improved only 2 retained this rating at the end of the project. One patient was rated as being worse at the end of Phase III. Four patients were rated as being worse at the end of the project. One male patient in Group A was rated as much improved both at the end of Phase III and at the end of the study. Two male patients in Group A rated as slightly improved by both doctor and nurse at the end of Phase III maintained this improvement at the end of the study. None of the males in this group was rated as being worse at the end of either Phase III or at the end of the study.

The clinical evaluation of the women in Group B at the end of Phase III shows 2 female patients much improved. At the end

of the project, after being put back on the placebo, 1 of these females was described by both the doctor and nurse as being worse. Of the 5 females in this group rated as slightly improved at the end of Phase III, there was agreement on the slight improvement of only 2 of these 5 at the end of the study.

At the end of Phase III one male patient in Group B was rated as being slightly improved by both doctors and nurses. At the end of the project 2 patients were rated as showing slight improvement. None was rated as being worse.

To sum up, 1 male patient in Group A was rated as much improved; 4 patients in Group A, 2 males and 2 females, were rated as slightly improved and 4 female patients in this group were rated as having become worse. In Group B, 4 patients, 2 male and 2 female, were rated as slightly improved and 1 female patient in this group was rated as having become worse.

PSYCHIATRIC EVALUATION

1. The Wittenborn Psychiatric Rating Scale and the Wittenborn Chronic Supplemental Scale showed no significant improvement or deterioration in either treatment or placebo group between their baseline and final evaluations.

2. The Standard Mental Status—Chronic Schizophrenia Profile consists of a checklist for items in categories such as personal appearance, observable behavior, emotional behavior or affective processes, speech and intellection or thought processes. Of the 115 items appearing in this form, 4 were found to be of statistical significance when comparisons were made of patients' profiles on the baseline and final evaluations.

An item described as "irrelevant responses to questions" showed some significant improvement in the treatment group, of whom 10 patients, 5 men and 5 women, showed improvement.

In an item rating ability to obtain and maintain attention, significant improvement was found in 5 patients in the drug group. This improvement appeared in 4 females and 1 male.

In an item evaluating inappropriate affective responses, a significant improve-

ment was found in 9 patients in the treatment group. Six of these were females and 3 were males. A partial explanation for this factor of apparent improvement may be found in the high incidence of extrapyramidal symptoms among the female patients.

In an item evaluating vagueness of verbal response a significant increase was noted in both treatment and placebo groups. Twenty-four patients, 13 in the placebo and 11 in the treatment group, showed an increase of this symptom.

DISCUSSION

This study was designed, in part, to ascertain the feasibility of using a state hospital setting and regular staff personnel on a research project in conjunction with a central Bureau of Research. The central Bureau of Research provided certain facilities and services which cannot be maintained by the average state hospital. It provided assistance in research design, periodic review of the evaluations made by the hospital staff and facilities for data processing. Biometric departments and special laboratory facilities needed in this type of research cannot be provided by most state hospitals whose main concern is the care and treatment of patients.

The hospital staff continued with its normal routine duties in addition to conducting the evaluations for this study. The staff personnel involved had been working on these wards for 6 months to one year prior to the beginning of this study. We therefore eliminated the influencing factor of introducing new personnel to our study group.

The patients were allowed to remain in their accustomed environment and were not transferred to a special research ward or

building. Those among the mildly withdrawn patients who had been previously assigned to ward duties and occupational therapy were continued in these activities. Medications were given to these patients at the same time as medicines were given other patients. We thus minimized the effects of special attention and so lessened the distinction between our research patients and the rest of the ward population.

Our research indicates that it is not necessary to maintain a special ward or building for research. It was quite possible to select patients and maintain them in their accustomed environment with no undue disruption of ward routine. The fact that behavioral disturbances showed no increase during the baseline study indicates that it is possible to eliminate all chemotherapy for a period of 3 months and still maintain patients in their usual environment. The use of regular ward personnel in research procedures was also proven feasible. However, it does require careful selection of such personnel on the basis of interest, responsibility and reliability.

With our experience of having 4 or 5 separate rating periods at which times we used 4 different rating scales, it became clear that a major need is for revision of our present tools for evaluating chronic schizophrenic patients.

SUMMARY

Our results indicate that minimal results were obtained from the use of this drug in our study of 47 patients.

The study has also indicated that the design and methodology used in this research provided an acceptable basis for collaboration between a central Bureau of Research and a state hospital staff.

CERTIFICATION IN CHILD PSYCHIATRY UNDER THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY¹

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In February, 1959, the American Board of Psychiatry and Neurology made an important decision for the entire field of American psychiatry. They gave formal recognition to child psychiatry as a sub-specialty in psychiatry and implemented this decision by appointing a committee of 6 psychiatrists who were recognized as experienced in this field. This committee was responsible for setting up standards and procedures for the certification of those psychiatrists who met the minimal standards of experience and training. It was clear from the outset that this committee of 6 was to function within the framework of the parent board. It is not an independent group, but as I shall bring out, the committee has had the full and wholehearted support of the Board, and has been free to set up its standards under which it has functioned. The committee wishes to give particular credit to the leadership of Dr. Francis Gerty, who, as President of the Board, played such an important part in bringing this to fruition, and to Dr. Boyd whose work with this committee has been invaluable in guiding us in getting underway.

This decision gave a new and important professional status to child psychiatry. It was preceded by a long and, at times, turbulent process. A belief was held by many psychiatrists that child psychiatry was not a sub-specialty and that any well trained psychiatrist was, by this fact, to be regarded as competent in all phases of practice. The need for special training, therefore, was not widely accepted. Many psychiatrists feared that the recognition of a sub-specialty would weaken and fragment the profession. The opposite will result from the decision of the American Board if this decision has the full support of qualified child psychiatrists and is responsibly administered.

A brief statement of some elements in the

history of child psychiatry may help to a better understanding of some of the honest doubts and questions that had to be settled before the Board could take this action.

Influences from many sources, medical and non-medical, gave impetus to the need to gain and apply in clinical settings a deeper understanding of the childhood period and the emotional problems that arose. Some of these forces emerged out of the more dynamic psychiatry which recognized that adult disturbances were rooted in the early period of life. The childhood period was presented through the disturbed perspective of the adult patient. Important as this was, there was a growing awareness that the child, living and growing in a family, needed to be understood out of himself and that clinical facilities had to be set up to help him and his parents.

Other forces were in action: changes in child welfare practices, developments in new educational procedures and more enlightened procedures in our Juvenile Courts. All served to heighten the need for developing new procedures and a different type of clinical setup. The work of Healy in Chicago, stressing the need to understand the individual, opened up another need, *i.e.*, for a real collaboration between professional groups, the psychologist, the social worker, the psychiatrist, the pediatrician. Each of these professions needed to find an effective way of working together, all pooling their separate skills to gain a deeper understanding of the child, not as an isolated person, but as a living, adapting, growing organism. This type of real collaboration was new in those days and around this fact developed many of the resistances to child psychiatry as a sub-specialty. Clinics were under suspect of being social agencies and not medical facilities.

The Commonwealth Fund of New York entered this new and exciting field in the early twenties working through the National Committee of Mental Hygiene. They sponsored the development of special clinics to diagnose and heal the emotionally disturbed

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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child and her family. While the early emphasis was on delinquency and its prevention, the clinics soon developed a broader purpose.

These clinics, designated as "Child Guidance Clinics," provided the first opportunity for the professional collaboration of the different disciplines. But it is significant that while these clinics emerged out of community concerns and less out of hospitals or medical schools or existing psychiatric services, they did turn to the medically trained psychiatrists for leadership. In those early days, there were no trained child psychiatrists; they had to grow with this infant field.

However, these clinics have provided over the years the first organized training program. They have joined hands in a National Association to develop clinic standards and have gradually determined what is needed for the training of professional personnel, especially the psychiatrists.

Gradually the field of child psychiatry began to emerge and as more psychiatrists were trained in special skills, the move that culminated in the decision of February, 1959, began to have more impetus. Within the American Psychiatric Association new developments furthered the recognition of this field. One of the earlier committees in this organization included in one group, the problem of the mental defective and the growing field of child psychiatry. Both fields with their interrelated interests needed special attention and the Committee of child psychiatry was formed.

The Group for the Advancement of Psychiatry, when first formed, had a committee on prevention and included all the interests of child psychiatry. The resistances encountered in setting up a special committee on child psychiatry served to indicate the extent of a belief that there was no special field. This committee was formed over the protests of many.

The thoughtful reports coming from G.A.P. and from the deliberations of the APA Committee on Child Psychiatry have played an important part in giving professional status to this field. When the Council of the APA finally approved its Committee's report that this was a specialized field needing special training for psychia-

trists, a real barrier was removed which cleared the way for the decision of the American Board.

Child psychiatry has been influenced by developments in the psychoanalytic field with the emphasis on child analysis. In turn, the developments in child psychiatry have influenced this related field. Together they have moved ahead to a deeper understanding of the child both as a biological and a social being, growing up in a family.

As our clinics for the emotionally disturbed children refined their techniques, they have come into closer affiliations with other medical facilities, particularly pediatrics. The relation between these two medical specialties would require a separate paper. It was not an easy relation but the maturing of both, each operating out of its own professional opportunities, has brought them into closer relation to each other.

This is a brief statement of how child psychiatry has emerged and how it now has the professional status of a psychiatric subspecialty. The committee appointed to implement this decision is having a hard but a rewarding task. This will be a report of a year's activity:

The first requirement for certification is that the applicant be a diplomate of the American Board. This is essential as we are not setting up Child Psychiatry as a separate profession. All those certified to date, with a few outstanding exceptions, have met this basic requirement.

The committee has been operating on the following requirements for 2 classes of applicants. Those whose major interests and activities, prior to 1950, have been with children and adolescents, may apply for certification on record and without examination. The committee has made every effort to be fair and liberal in evaluating their experience and training before 1950 and to date has certified 110 on this basis. Since the committee is concerned with those candidates currently in this field of practice, we have required that those who were previously in this field and who left it for other professional work, should indicate in this application that they have returned to this field for at least 2 years preceding application. The committee reserves the right to withhold certification on record for those

whose qualifications are in doubt, and recommend them for certification after successfully passing the examination. This group has presented many difficulties to the committee which has made every effort to be fair.

The second group of candidates are those who have completed *acceptable training* since July 1950. This is an approximate date. For example, those who completed their training in September would be accepted for examination. The committee has accepted a 6-year sequence: 2 years' training in basic psychiatry, 2 in child psychiatry, and 2 for experience. Those psychiatrists in the 3-year training programs required by the American Board of Psychiatry and Neurology may spend one of those years in child psychiatry in a training program approved by both Board and committee. Each candidate is individually evaluated on the basis of the competency of his training. Then with the additional year of approved residency training in child psychiatry and with the required 2 years of experience, the applicant will be eligible for examination.

The committee had the difficult but important problem of determining how credit could be given for pediatric training. The committee recognized the importance of pediatric training for a child psychiatrist, without making this training mandatory, which some pediatricians wanted. The committee has stated that it is desirable that psychiatrists have, as a part of their training, experience in pediatrics. In October 1959, 2 members of the child psychiatry committee, the President and the Executive Director of the American Board of Psychiatry and Neurology, met with 3 representatives of the American Board of Pediatrics. A full day was given to the discussion of this problem, focusing on the question of whether pediatric training could be substituted for the 2 years of training in basic psychiatry. The child psychiatry committee held to the importance of basic psychiatric training and agreement was reached finally on the following basis: those candidates who have had 2 years of appropriate pediatric training can offer such training as experience. This means that an applicant with this training will take 2 years of basic psychiatry and 2 years of child psychiatry and be eligible for

examination. This represents an important concession of the American Board of Psychiatry and Neurology who have agreed to admit these candidates to the basic examination in order to become a diplomate.

The committee also agreed to have a representative from the American Board of Pediatrics serve as a full member on the child psychiatry committee, as a non-voting member. Dr. Hughes has served in this capacity.

In carrying out its responsibility the committee considered the type of examination that should be set up. The decision was to start with a written examination to be followed by an oral. Two written examinations have been held in different parts of the country; 105 were approved for this examination, 73 have taken it. We found that the written examination needed to be followed by an oral and have allowed all who took this first part to take the second. The oral examination was held in Chicago, April 25 and 26, with the following results: All 73 child psychiatrists who had taken the written examinations took the oral examination and 58 were passed as qualified.

After the oral examination was completed, the committee discussed the problem of giving both a written and oral examination. The value of the dual system could now be objectively studied after a full discussion. The committee concluded that the oral examination covering the following 6 areas was most comprehensive: 1. Normal growth and development; 2. Clinical problems of the pre-school child; 3. Clinical problems of the school-age child; 4. Clinical problems in the adolescent period; 5. Inter-professional and community relations; and 6. History of, and literature in, child psychiatry.

Comparing the results of the 2 examinations, the committee has decided to drop the written examination and give in future only the oral.

Another important assignment to the committee is the evaluation of every training facility in the United States offering training in child psychiatry. To do this, the committee has drawn up an application form which has been sent out to all known facilities stating the purpose of the questionnaire and inviting them to make application to the committee if they felt they were qualified

and wanted to be considered as an approved training facility. The committee hopes to get a full quota of requests. If this happens, we will have the most complete list of training facilities, so much needed if the training listed by applicants is to be appraised for the training they have had.

As the facilities are approved by the committee, more will be accomplished. Training facilities in child psychiatry will become a recognized part of the extensive medical network in the various specialties under the Medical Specialties Board. We anticipate having the assistance of the Council of Medical Education and of hospitals in this endeavor. To further this, the committee has

prepared a brochure which will be accepted by the medical speciality board as the basis of an inspection. We have been in a sound position to make clear what constitutes a good training program.

The fervent hope of the committee is that all qualified child psychiatrists in this country will avail themselves of the opportunity to join the family of certified child psychiatrists. By doing so, they lend important support to this move to give professional status to this growing field. Each one applying makes this move more effective and insures the future of our important field of professional practice.

A STUDY OF THE RELIABILITY OF THE MENTAL STATUS EXAMINATION^{1, 2}

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The primary problem in psychiatric research often revolves around the reliability of the psychiatric evaluation of the patients. Unless different psychiatrists will agree as to the clinical characteristics of these patients, any other studies done with the intention of relating them to these characteristics become incapable of comparison. For instance, it is useless to study the blood sugar levels in schizophrenics if a significant degree of agreement cannot be reached as to who is schizophrenic and who is not. The present study was conducted as part of a large research investigation of schizophrenia carried out under the joint auspices of the University of Michigan and the Ypsilanti State Hospital; and was aimed towards an inquiry into the factors influencing the reliability of the psychiatric examination.

RECORDING OF DATA

The frame of reference most commonly used by psychiatrists in evaluating their patients, particularly in a state hospital setting as in the present case, is the mental status examination. Outlines for such examinations are to be found in practically every textbook of clinical psychiatry, as well as in several volumes dealing expressly with this subject. It was therefore considered wise to begin our inquiry within this standard

framework. Consequently, a form was prepared which incorporated the majority of items included in the mental status. This form underwent several revisions as the result of clinical trials with its use, and as it was finally developed and used in this study, it included, in addition to the usual mental status items, various items pertaining to certain psychodynamic questions regarding the patient's personality, defense mechanisms, etc.⁷

In constructing the form, attention was given to the problem of recording data in a way which would enable it to be coded and processed by the IBM 650 digital computer. Needless to say, without the services of the computer the vast number of correlations involved in a study of this sort could not have been attempted.

It was necessary, then, to reduce the mental status items to a series of questions calling for concrete statements, in contrast with the usual clinical method of describing the mental status characteristics in narrative fashion. Two major approaches to this problem presented themselves, and it was decided to incorporate both approaches in the current form in order to permit an examination of the relative effectiveness of each in the clinical setting.

The first approach involves framing the questions in terms of degree of magnitude of a trait or characteristic, and calls for a judgement of the relative intensity of presence of such characteristics along a linear numerical scale (Figure 1).

There are many items of the conventional mental status which cannot readily be treated in this fashion, either because they are absolute (such as male vs. female) or mutually exclusive comparisons (again male vs. female), or represent a choice between

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² From the University of Michigan and Ypsilanti State Hospital, Joint Research Project on Schizophrenia and Psychopharmacology; and the Department of Psychiatry, University of Michigan Medical School.

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⁷ As finally adopted, the form included 30 scale items and 29 categorical items which were also used in a form to score Rorschach data on these patients. Comparison of Rorschach and Psychiatric scorings will be reported elsewhere (Vandenberg & Rosenzweig, 1960).

FIGURE 1

Examples of Scale Items				
1. Liability of Affect				
1 hyper	2 normal	3 blunted	4 flat	
2. Extent of Interpersonal Contact				
1 gregarious	2	3 normal	4	5 seclusive
3. Tension				
1 relaxed	2 tense	3 restless	4 agitated	5 tremulous

This is the usual "rating scale" approach, and the items treated in this fashion in the present study will be referred to as "scale items."

statements not linearly related (such as facial expression and participation in interview) (Figure 2). Some items could have been presented in terms of a linear scale, but it was felt that the frequency of their occurrence was limited or questions of intensity were not sufficiently relevant to warrant the expansion of the form and total number of questions necessary to include them as "scale items."

Thus, a series of questions was prepared calling for categorical judgements regarding the presence or absence of certain characteristics (yes-no judgements) or selection of the single most appropriate statements from among several alternatives offered (multiple choice judgements). Items presented in either of these two forms will be referred to in this paper as "categorical items."

In addition, the form called for an expression by the psychiatrist of his confidence in the accuracy of his own judgement regarding each item. This rating proved

impractical in actual use, however, creating undue difficulties in the recording of data, and was therefore dropped from the study.

Altogether, there were 37 numerical scale items and 52 categorical items (36 yes-no, and 16 multiple choice), calling for a total of 89 individual judgements.

METHOD AND RESEARCH DESIGN

Three psychiatrists participated in the study. Each is Board certified, and each has intensive experience with the types of patients studied. Two of the psychiatrists are on the staff of the State Hospital, though neither had direct responsibility for the care of any of the patients in the study. The third psychiatrist is on the staff of the University of Michigan, and had no prior contact with any of the patients.

Prior to the present study, the psychiatrists used the original form and its subsequent revisions (including the final form) in trial runs with a number of randomly selected patients, until each felt familiar and comfortable with its use. No attempt at constructing a scoring manual was made, but questions of clarity or semantic problems arising out of the use of the form were discussed between the psychiatrists before beginning the study proper.

The study was conducted as follows: A number of male patients between the ages of 20 and 50 were selected at random from the hospital rolls. From this pool, patients were selected who, on the basis of review of their hospital records and questionnaires completed by their ward physicians, met the following criteria:

FIGURE 2

Examples of Categorical Items (Multiple Choice)	
1. Participation in Interview	
_____	a. Cooperative, spontaneous, attentive
_____	b. Apathetic, withdrawn, preoccupied, poor contact
_____	c. Hesitant, guarded or evasive
_____	d. Negativistic or abusive
_____	e. Overdependent
_____	f. Distractable
_____	g. Not determined
Examples of Categorical Items (Yes-no judgements)	
2. a. Disoriented for time _____ yes _____ no _____ ???	
b. Bizarreness of thinking _____ present _____ absent _____ can't say	

1. Over two years in the hospital.
2. Would be expected to remain in the hospital at least 60 days more.
3. Were free from severe somatic illness that would disqualify them for biochemical study.
4. Were sufficiently cooperative to take psychological tests, collect their urine, *etc.*

This selection procedure, conducted by persons not participating in the Mental Status Study and without consultation with the psychiatrists, was continued until a total of 50 patients was available.

Each of these patients was then seen by the group of 3 psychiatrists sitting together. During these sessions, one psychiatrist served as interviewer and conducted the examination. The other two were non-participant observers. The role of interviewer was rotated so that each psychiatrist served in this capacity for approximately one-third of the patients. Before the patient was brought to the examining room, a summary of his history was read aloud by the interviewer from the patient's hospital chart. Immediately after the patient left, each psychiatrist completed the rating form independently and without consultation with his colleagues. The average length of the interviews was 30 to 40 minutes. The average time taken to complete the form was 5 minutes.

After a period of 6 weeks, 30 of the patients were re-interviewed using the same procedure. This time the patients were selected so that 10 had previously been interviewed by psychiatrist A, 10 by B, and 10 by C.

The role of interviewer was now rotated so that each psychiatrist interviewed 10 patients, half of whom had previously been in-

terviewed by one of his colleagues, and half by the other. The selections and rotations were accomplished beforehand by persons unconnected with the examinations, who knew nothing of the patients or the previous scorings, nor even which psychiatrist was A, B, or C.

After all the ratings were completed, the data were coded upon IBM punch cards, and two types of computations were made. Agreements between all the ratings were made on each item (inter-rater agreements), and agreement of each psychiatrist with himself on each item over the two interviews (consistency scores) were calculated. The significance of the obtained agreements and consistency scores on the categorical items were calculated by comparing against chance expectation using the Chi squared method. For the scale items, the Pearson product moment correlation coefficient (r) was used to compute significance.

RESULTS AND COMMENT

A. Comparison of scale items vs. categorical items: For purposes of this study a p value of 0.1 was considered significant. Breakdowns were calculated for p values of 0.05, 0.02, 0.01 and 0.001 (see Figure 3). A comparison of the number of significant agreement and consistency scores on scale items vs. categorical items reveals a better than 0.10 chance agreement on 17 of the 37 numerical scales, while for the categorical items only 14 out of 52 scores reached this level. Thus, almost half of the agreements on the numerical scales were within the significant range, while only slightly more than a fourth of the categorical items showed this level of significance. The consistency scores show a similar pattern.

FIGURE 3
Significance of Categorical and Scale Items

P	SCALE ITEMS		CATEGORICAL ITEMS	
	AGREEMENT	CONSISTENCY	AGREEMENT	CONSISTENCY
.001	5	2	1	1
.01	10	5	2	1
.02	0	2	5	1
.05	0	5	3	3
0.10	2	1	3	4
All Levels	17	15	14	10
Total Items	37	37	52	52

As can be seen from Figure 3, the distribution according to levels of significance also strongly favors the numerical scale items. These findings indicate that reliability is significantly affected by the kind of rating technique used, and suggest that numerical scales are to be preferred over categorical judgements.

B. Difference between raters: An examination was made of the scoring of each item by each psychiatrist over the 50 patients. No individual scoring biases were noted. Further, the correlations on 30 numerical scales,⁸ were averaged after Z transformation (see Figure 4). This method also indicated that there were no systematic differences between the raters. These findings suggest that disagreements in rating tend to arise sporadically in individual situations, and do not tend to follow a pattern indicative of an individual rater's prejudice, background, or orientation.

In determining the reliability of the men-

FIGURE 4
Index of Agreement and Consistency for the
Ratings on 30 Numerical Scales

	FIRST INTERVIEW			SECOND INTERVIEW		
	A ₁	B ₁	C ₁	A ₂	B ₂	C ₂
A ₁				48	—	—
B ₁	47		54	—	34	—
C ₁		50		—	—	51
				A ₂	59	67
				B ₂		53
				C ₂		

⁸ These were scale items that appeared on both the psychiatric and Rorschach rating forms.

tal status examination it is necessary to know not only whether the psychiatrists' ratings will agree with each other, but whether the same psychiatrist will rate the same phenomenon the same way each time.

It was primarily to attempt an answer to this question that the consistency scores were obtained. Since these were chronic hospital patients, it was expected that their clinical picture would remain fairly constant over the 6 week interval of the study. At first glance, noting that the consistency scores are lower than the inter-rater agreements, one might conclude that this assumption was false.

A closer consideration of the results, however, gives pause to this line of reasoning. For we notice that on those mental status items which are least stable (lability of affect, predominant mood, facial expression, participation during the interview, etc.) we get a significantly high consistency. That is to say, those characteristics most likely to vary seem to vary the least. This would suggest that the population is in fact, unusually stable in its clinical characteristics, as had been expected.

This still leaves the question of the poorer showing in consistency as compared with inter-rater agreement scores (see Figure 5).

A comparison of inter-rater agreement scores (IRA) with consistency scores (C) reveals 4 possible categories:

1. High IRA
High C
2. High IRA
Low C
3. Low IRA
High C
4. Low IRA
Low C

FIGURE 5
High Agreement — High Consistency Items

CATEGORICAL ITEMS			SCALE ITEMS		
ITEM	IRA P	C P	ITEM	IRA P	C P
Diagnosis	.001	.001	Organization of thinking	.001	.001
Participation in interview	.01	0.10	Level of intelligence	.001	.001
Facial expression	.02	.01	Reality testing	.001	.01
Sensorium	.02	0.10	Verbal productivity	.001	.05
Hallucinations	0.02	0.10	Self evaluation (work role)	.001	.05
Predominant mood	0.05	0.05	Lability of affect	.01	.01
Impaired recent memory	0.10	0.05	Psychomotor activity	.01	.01
Bizarreness	0.10	0.10	Insight	.01	.01
			Ego Strength	.01	.01
			Gait	.01	.02
			Rate of Speech	.01	.05
			Concreteness of thinking	.01	.05
			Appropriateness of affect	.01	0.10

When the values are high for both, the reliability is good all round, and need not concern us for the moment. When the values are low all round, we must assume that in a stable population, there are items about which (for one reason or another) there is too much uncertainty within each psychiatrist to permit reliable scoring. Where consistency is high but IRA is low, we would expect that we were dealing with terms about which each psychiatrist feels clear, but about which there are differences between the psychiatrists because of individual bias or other factors. Since it has already been indicated that individual rating bias is minimal, we would expect that the number of instances of high

C and low IRA would be small, and in fact this is the case for only 5 items (see Figure 8).

We may next consider those items on which there was high IRA but low C. (Figure 7)—This situation would imply that the psychiatrists were able to agree among themselves as to what they observed, but apparently observed different characteristics at each of the two interviews. Still assuming a stable population, one could account for these differences if one considered the psychopathology of the patient to have aspects which are not on the surface, but must be elicited by the psychiatrist during the examination. Thus, if a patient were delusional, assuming the psy-

FIGURE 6
Low Agreement (IRA) - Low Consistency (C)

CATEGORICAL ITEMS	SCALE ITEMS
Posture	Depth of affect
Speech Defects	Tension
Attitude in interview	Personal concepts used
Specific amnesia	Objectivity of concepts
Patchy memory defects	Symbolism
Confabulation	Extent of interpersonal contact
Distortion in thinking	Type of interpersonal contact
Word salad	Attitude toward others
Systematization of delusions	Conventionality
Preoccupations (8)	Degree of fantasy life
Neurotic symptoms (7)	Type of fantasy life
Sexual conflicts	Object relationship
Direction of aggression	Suggestibility
Denial	Frustration tolerance
Repression	Ability to postpone gratification
Regression	Impulse control
Direction of orientation	Social self evaluation
	Rapport

FIGURE 7
High Agreement - Low Consistency Items

CATEGORICAL ITEMS	SCALE ITEMS
Voice	General vs. Specific concepts
Sensorium	Level of interpersonal contact
Orientation for time	Self evaluation (sexual)
Delusions	Self evaluation (Intellectual)
Body image	

FIGURE 8
Low Agreement - High Consistency Items

CATEGORICAL ITEMS	SCALE ITEMS
Circumstantial speech	Type of aggression
Remote memory impairment	Rigidity
Personality characteristics	

chopathology remained present throughout the period of the study, it would remain for the psychiatrist to draw the patient into talking about or otherwise demonstrating the delusions. If the interviewer is successful, then the pathology is manifest during the interview and all psychiatrists can agree as to its presence; if the interviewer does not elicit the pathology, all psychiatrists can agree that this finding was not demonstrated during that particular interview. An inspection of the 9 items falling into this category reveals that they are for the most part traits which would not be ordinarily expected to change markedly over a short time, but are all of a type requiring elicitation by the psychiatrist. It is suggested therefore, that while there were no consistent individual differences among the psychiatrists as raters, there were differences in approach to the examination, which determined whether or not certain aspects of psychopathology were elicited during a given interview. In other words, while reliability was not significantly influenced by individual bias in interpretation of concepts or by individual capacity to make observations it was significantly influenced by individual differences in interviewing technique.

Turning attention now to those items which demonstrated poor IRA and poor consistency (Figure 6), the interpretation of results becomes more difficult and calls for an analysis of the particular items involved.

Space does not permit detailed review of such an individual analysis here, but the following factors have been suggested as a result of our examination of these results.

a. Some of the items are of such infrequent occurrence that the chance expectation is abnormally high (since chance expectation is based on frequency distribution). Thus, even 99% observed agreement is in several cases not better than chance, and hence not significant.

b. Some items are dependent upon categorical yes-no judgements, where slight differences between raters as to where to draw the cut-off line result in great differences in scoring. Such items would fare much better if presented as numerical scales.⁹

c. Some items call for completely subjective emotional responses of the raters

(predominant mood, depth of affect, direction of aggression, object relationship, impulse control, etc.). That is, in order to evaluate the patient's trait, the psychiatrist must examine his own emotional response to this trait. Personality differences between the psychiatrists, day to day changes in emotional responsiveness, personal problems, etc., all would tend to affect reliability of such ratings adversely.

d. Certain items are poorly constructed or ambiguous (posture, predominant attitude in interview, general direction of orientation, suggestibility, level of regression) or call for information about the patient not readily available from the interview situation (extent and type of interpersonal contact on the ward, degree of fantasy life, etc.). In such cases discriminations could not be made reliably under any circumstances.

e. A number of the poor agreements suggest that some concepts in common clinical usage, which are usually taken for granted as being universally understood, are in fact unclear. This may be true for items on the form dealing with memory impairment, systematization of delusions, autistic *vs.* realistic concepts, symbolic thinking and autistic fantasy. There appeared to be considerable uncertainty as to what constitutes neurotic symptoms in a group that was for the most part psychotic, as well as to how much concern indicates a patient is preoccupied with a given thought. It may well be that some of the basic concepts in psychiatry require close scrutiny if communications between psychiatrists are to be at all meaningful.

For us, the most interesting finding was the high number of instances giving high IRA and high C values. It may be noted that this group also contains several items which may be considered as vague concepts (*i.e.*, ego strength, insight, reality testing), and the question arises as to why

⁹ This point is well illustrated by the following: In the present study, "anxiety" was an item classified as a neurotic symptom, to be scored by "yes-no" judgement. IRA and C were both below chance. In a subsequent study, anxiety was scored alone along an 8 point scale. Six raters, rating 21 patients, showed agreements in their ratings at a .001 level of significance.

these poorly defined items fared so well while others were so poor in their reliability. We can only speculate. Perhaps there is less clarity regarding the clinical expressions indicative of autism, say, than regarding the clinical manifestations of impaired reality testing. Perhaps the psychoanalytically derived concepts have become more familiar and are better understood than the traditional, more descriptive ones.

Finally, we may consider diagnosis. This reached a .001 *p* value even though a categorical item.¹⁰ There were a number of disagreements with the diagnosis carried on the patient's chart, but the panel of psychiatrists in this study agreed between themselves 96% of the time. This in itself is rather remarkable, and suggests some sort of common diagnostic framework at least shared by these 3 psychiatrists. The fact that diagnostic agreements far exceed agreements on subitems may indicate that the diagnostic formulation was made independent of at least most of the specific criteria appearing in the form.

SUMMARY

A mental status rating was developed incorporating two major scoring techniques: the linear scale; and categorical judgements on yes-no or multiple choices.

Using this form, 50 chronic hospitalized patients (over 2 years in the State Hospital) were evaluated independently but simultaneously by 3 Board-certified psychiatrists, one of whom served as interviewer, and the other two as non-participant observers. The role of interviewer was rotated, each psychiatrist interviewing approximately one-third of the patients. After a 6-week interval, 30 of the patients were re-evaluated by the same psychiatrists, each patient having a different interviewer than before.

The obtained agreements on ratings of each item, as well as comparison or ratings of each psychiatrist with himself on first and second interviews (consistency scores), were calculated. The significance of the agreement and consistency scores was eval-

uated using the Pearson product moment correlation coefficient (*r*) for scale items, and by comparing against chance expectations by Chi squared (X^2) for categorical items. Several thousand calculations were performed using the IBM 650. The data breakdown was designed to demonstrate the effects upon reliability of differences between interviewers, differences between raters, changes in patients over time, and the limitations of the rating methods.

CONCLUSIONS

1. Scale items fared consistently better than categorical items, with better than .10 chance agreement on 17 of the 37 numerical scales but on only 14 of the 52 categorical items. The consistency scores were similar. These findings indicate that reliability is greatly affected by the kind of rating technique used, and suggest that numerical scales are to be preferred.

2. There were no systematic differences between the raters.

3. Items normally expected to be unstable (*e.g.*, facial expression, participation in interview, affective lability), showed very high consistency over the two interviews, suggesting that these patients did not change very much during the 6 weeks interval, as was to be expected since the population consisted of chronic hospitalized patients.

4. Certain normally stable items (*e.g.*, projection, delusions, defective orientation), while showing good agreement between raters at each examination showed poor consistency between examinations, suggesting that different interviewers may tend to bring out different manifestations of psychopathology in the patient, which then are recognized by all raters with good agreement.

5. Breakdown of scores on specific items revealed some unexpected discrepancies which are difficult to interpret, but may suggest a need to re-examine the operational definitions of some psychiatric concepts usually taken for granted.

6. Agreement on diagnosis exceeded a significance level of .001.

¹⁰ The question called for a yes-no judgement regarding schizophrenia vs. not schizophrenia.

A DAY CARE CENTER IN A STATE HOSPITAL¹

LEON A. STEIMAN, M.D., AND ROBERT C. HUNT, M.D.²

Day care of the mentally ill within the community, in a hospital setting but without isolation from home, family and community, has grown in popularity over the past 10 or 12 years.

It was around 1938 that Dr. Helen Boyle began admitting psychiatric patients to a general hospital in Hove, England. About 1945 Dr. Joshua Bierer started experimenting in the same direction, in his attempt to extend the principles of "social psychiatry" to the everyday treatment of patients.

The first day hospital was set up in 1946, by Dr. Ewen Cameron, at the Allan Memorial Institute, Montreal, Canada. Five years later, a similar day hospital was created by Dr. Moll, as part of a psychiatric ward at the then new Montreal General Hospital. Both proved to be outstanding successes and, in 1954, the first night center was established at the Montreal General Hospital. In 1951, an extensive plan for day care in connection with large mental hospitals was set up in St. John's, Newfoundland.

The day hospital plan in New York State was first proposed in the "Nine Point Program" published in October, 1955, by the Commissioner of the Department of Mental Hygiene, Dr. Paul Hoch. This program called for the establishment of 2 day hospitals, one in Brooklyn and the other in Poughkeepsie. The purpose of the Brooklyn setting was to serve selected patients attending the Brooklyn after-care clinics, all of whom are on convalescent care from state hospitals. The Poughkeepsie unit, however, was to concentrate more on community-type referrals drawn from a "random segment of population." These day hospitals were set up as independent state pilot projects, with their own budgets and organizations. This was, so far as we are aware, the first deliberately organized and planned ef-

fort by a state hospital in this country to provide day care on a non-selective, comprehensive basis.

The Poughkeepsie psychiatric day hospital opened July 2, 1956, in the Hudson River State Hospital, under the neutral name of "Day Care Center." Despite its location on the grounds, the administration thought it important at that time to dissociate the service in the public mind from the state hospital, and the center was given its own separate quarters, entrance, staff, and special stationery. Although basically independent, the center depends upon state hospital diagnostic facilities such as X-rays and laboratory services.

The center is located in a self-contained wing, partitioned into space units for offices and various types of therapy. The treatment area includes the somatic unit, with 10 beds for sub-coma insulin therapy and recuperation from electroshock treatment, plus facilities for recreational and occupational therapies. The library, with a stage setting for psychodrama, serves also for group psychotherapy and staff conferences.

The staff of the Day Care Center consists of: 2 psychiatrists, 2 psychiatric registered nurses, 10 psychiatric aides, 1 psychiatric social worker, 2 occupational therapy instructors, 1 recreational instructor, 1 half-time clinical psychologist, and 1 stenographer-receptionist.

Most of the staff members were recruited from the local state hospital, and although the majority had years of experience with mentally ill patients, initially they were given a 6-week training course, to prepare for the specific requirements of this new facility. In-service training has been continued with bi-monthly team sessions, at which the patients' behavior, problems, achievements, etc., are discussed and new admissions presented.

The center is open from 8:00 A.M. to 4:30 P.M., Monday through Friday. Anyone over 18 within commuting distance can apply for treatment. There is no commitment; no compulsion of any kind. Patients

¹ Read at the 116th annual meeting of the American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

² Hudson River State Hospital, Poughkeepsie, N. Y.

are referred by physicians, clinics, agencies, and occasionally by the Court. Self-referrals are accepted, if suitable, as are patients discharged from the state hospital who are still rather ill and in need of intensive treatment.

No particular distinction is made as to the type of illness, as the operational structure and staffing permit treating the seriously ill. Experience has shown that the contraindications for day care need be few, although grossly disturbed, highly aggressive or greatly destructive patients should not be admitted. The screening process selects patients who can be helped in a day setting, whose admission to a state hospital may thus be prevented. The screening process is also used to refer patients for help to other agencies, mental health clinics, counsellors, *etc.*

In practice, the majority of patients screened out are those considered suitable for fully ambulatory treatment and not ill enough to warrant admission for day hospital care. It is a rare patient who is considered too ill for day care, provided the family is able to offer supervision the rest of the time. The liberal intake policy has been justified by a complete absence of suicidal attempts or seriously aggressive acts. Seriously ill patients with potential for such behavior are given emergency attention and placed under treatment the day of referral.

The Poughkeepsie day hospital offers a comprehensive treatment program tailored to the needs of the individual patient and his particular problem. Treatments available include ECT, sub-coma insulin treatment, and all forms of psychotherapy, ranging

from intensive techniques to directive and supportive. Group therapy is widely practiced. Pharmacological and physical methods are used, when necessary, as adjunctive to individual needs. The program also includes social casework, and therapeutically oriented occupational and recreational activities. There are no fixed rules about the therapies—timing, duration or overall length. There are, moreover, no fixed rules about patients' stay at the center. The majority of newly-admitted patients attend 8 hours a day, 5 days a week. As improvement takes place this is commonly reduced to 3 days a week or less, finally tapering off to supportive sessions once or twice a month.

The treatment program is not limited to the patient; it also involves his family. A quite successful therapy program with relatives is carried out at the center on weekdays and Sundays by the psychiatric social worker. Planned, structured sessions held with individual families and with groups contribute greatly to better understanding of the patient's emotional problems by his family.

In the first 3½ years, there have been admitted to the day care center 508 patients from 650 applications processed. Of the 142 deferred cases, some lacked motivation for treatment; others did not fit into the program. Many were referred to agencies, counsellors, clergymen and mental health clinics. A few were grossly disturbed, highly aggressive and destructive patients who would have disrupted the normal course of family, community or facility life.

Schizophrenic reactions range from the

TABLE 1
Diagnostic Distribution

	NO. OF PATIENTS	PERCENTAGE
Psychoneurotic disorders	161	31.7%
Schizophrenic reactions	138	27.1%
Involitional psychotic reactions	77	15.2%
Transient situational personality disorders	39	7.7%
Chronic brain disorders	29	5.7%
Personality disorders	29	5.7%
Affective reactions	21	4.1%
Unclassified	6	1.2%
Acute brain disorders	5	1.0%
Mental deficiency	3	.6%
Total	508	100%

pseudoneurotic to the psychotic. We believe these cases are suitable for sub-coma insulin treatment in a psychiatric day hospital, and that their chance of resocialization in a propitious atmosphere is relatively good. The members of the involuntary group show most gratifying results, from ECT in particular.

TABLE 2
Source of Referrals

	NO. OF PATIENTS	PERCENTAGE
Physicians	185	36.4%
Self-referrals	176	34.6%
Other sources	40	7.9%
Mental health clinics	39	7.7%
Area agencies	36	7.1%
State hospitals	32	6.3%
Total	508	100%

Referring physicians include psychiatrists in private practice. These totals speak for the highly gratifying relations with the community's local private psychiatrists, general practitioners and agencies.

TABLE 3
Dangerous Tendencies

	NO. OF PATIENTS	PERCENTAGE
Latent suicidal	84	16.5%
Overtly suicidal	48	9.4%
Highly disturbed	11	2.2%
Homicidal tendencies	8	1.6%
Total	151	29.7%

Most of these patients with dangerous tendencies are commonly thought to require detention in a state hospital. Most of these have responded to treatment, and there have been no tragedies.

TABLE 4
Age Distribution

GROUPINGS	NO. OF PATIENTS	PERCENTAGE
18-29 years	125	24.6%
30-39 years	158	31.1%
40-49 years	94	18.5%
50-59 years	61	12.0%
60-69 years	11	2.2%
Total	508	100%

Sex Distribution

Male	183	36.0%
Female	325	64.0%

The relatively small geriatric group is a reflection of our admission policy of taking in only patients who are in need of treatment, not custodial care. Since the establishment of the center, the female admission rate has remained consistently twice the male rate.

TABLE 5
Length of Treatment

	NO. OF PATIENTS	PERCENTAGE
Less than 3 months	212	50.7%
3-6 months	128	30.6%
6 months-1 year	47	11.3%
1-2 years	28	6.7%
Over 2 years	3	0.7%
Total	418	100%

TABLE 6
Case Loads

YEARS	AVERAGE MONTHLY CENSUS	AVERAGE NUMBER IN FULL PROGRAM ^a	AVERAGE DAILY ATTENDANCE
1956-1957	50	12	10
1957-1958	72	18	14
1958-1959	84	24	26
1959-1960	94	62	35

^a Average number in attendance from 1-5 full days a week.

The sustained increase in number of patients in attendance at the center is gratifying evidence of community acceptance. It is also somewhat dismaying to see case loads so rapidly approaching the maximum capacity of the center, and to be faced with the prospect of having to set up a waiting list.

TABLE 7
Condition on Discharge

	NO. OF PATIENTS	PERCENTAGE
Much improved	147	48.7%
Improved	50	16.5%
Slightly improved	51	16.9%
Unimproved	54	17.9%
Total	302	100%

By the rather rigorous criteria used, almost half the patients were restored to a good level of functioning and 82% showed some degree of improvement. Not included are an additional 116 admitted but not

treated; some of these were withdrawn, after screening, by families who felt unable to accept responsibility to care for the patients outside of hospital. Others failed to report for treatment, and some were admitted only for study and referral.

TABLE 8
Treatments Applied

	NO. OF PATIENTS	PERCENTAGE
Electro-convulsive therapy	97	19%
Sub-coma insulin therapy	68	13%
Drug therapy	217	42%
Individual psychotherapy	341	67%
Group Psychotherapy	185	36%
Occupational therapy	434	85%
Recreational therapy	483	95%

Somatic therapies, including ECT, insulin and drugs, have been used much more liberally than is usually the case in ambulatory practice. This reflects the type of case material—major psychoses and acutely ill psychoneuroses considered much too ill for office treatment.

CONCLUSIONS

The main objective of the Day Care Center was a pilot demonstration of the extent to which day care could substitute for and supplement hospitalization in the care of the mentally ill, while also establishing a closer relationship with the community. The psychiatric day hospital has proven a most successful practical application of psychiatry to the community care of these patients. It is our conviction that such a setting, serving a large number of severely ill patients, constitutes a most efficient and readily acceptable way of providing help for the mentally ill, since it maintains contact with home, family and community throughout the period of treatment, thus avoiding hospital dependency and regression, and easing readaptation to outside life.

Community acceptance of psychiatric treatment on a day-care basis has exceeded all expectations. The understanding and

good will generated are given not only to the center, but also to the parent hospital, the Department of Mental Hygiene, and psychiatry in general, and the original efforts to dissociate the day service from the state hospital are no longer necessary.

The project has demonstrated that it is possible to treat effectively and safely in a day hospital many patients so ill that they would be hospitalized, were this service not available. It has unquestionably prevented many an admission to the state hospital. It would be tempting to promise a consequent reduction in state hospital admissions, but this would be naive. The fact is that hospital admission rates in the area served by the day center have gone up sharply to the highest level in history, and higher than in any other county in the state during the period of the center's operation. It is our impression, however, that there has been a significant reduction in the number of chronically disabled mentally ill, which can be related to the effectiveness of the hospital program in general and of the day hospital in particular. Other studies now in progress should yield documentation of this impression at a later date.

SUMMARY

1. A day hospital was opened at the Hudson River State Hospital on July 2, 1956.
2. The day center treats seriously ill psychotic and psychoneurotic patients, including those with dangerous tendencies.
3. Since the opening, 508 patients have been admitted and the number under treatment is increasing steadily.
4. Physicians have referred 36.4% of the patients, and 34.6% were self-referrals.
5. There are few clinical contraindications to day hospital treatment.
6. Patients and their families readily accept psychiatric treatment when offered on a day basis.
7. Day care is a safe and effective method of treating many seriously ill, and is particularly valuable in that it maintains contact with home, family and community, and avoids hospital dependency.

THE STUDY OF MOTOR DEVELOPMENT IN INFANCY AND ITS RELATIONSHIP TO PSYCHOLOGICAL FUNCTIONING¹

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There has been a growing interest in the role which organic factors may play in a wide variety of psychiatric disorders in children, although these disorders are not associated with structural abnormalities of the brain. The development of techniques for studying specific disturbances in children with known organic brain disease, has made it possible to study similar mechanisms in children with milder handicaps in which the etiology is still obscure.

Immaturity and poor organization of functions under control of the central nervous system can be seen in tests of motility (3), perception (1, 4, 10, 25) and intelligence (27) and in the EEG (18). Disorders of these functions, similar to those in children with known brain damage, are found in many children with language (6) and reading disabilities (5, 23, 24), and in a large number of children whose behavior disorders are accompanied by less specific impairments, but who resemble brain-damaged children in their hyperactivity, impulsivity and low threshold for anxiety (9, 19, 26). Similar disturbances in motility, perception and intellectual functions are also found in some children with schizophrenia, but in this condition the dysfunctions are marked by the changing and erratic qualities peculiar to this illness (2).

Organic factors may be investigated in infancy as well as in childhood and later life. Gesell demonstrated many years ago that children with organic brain damage can be diagnosed in the first months of life on the basis of disturbances in motor and adaptive development (16). Using the Gesell examination, the author found that there were abnormalities of neurological maturation as early as 1 month of age in an infant who later developed clinical

schizophrenia. This infant showed a disorganized postural development, with a retardation to less than 50% of normal, followed by an acceleration of 2½ times the normal rate, and an abnormal scatter between different aspects of development at any one examination. These features were accompanied by disturbances in alertness, physical growth, and autonomic functions (12). Milder developmental disturbances were found in 3 infants who developed behavior disorders, which were much more severe than any seen in the remaining infants who showed no developmental disturbances in infancy (11). Data from this study and retrospective studies of schizophrenic children indicate that there is no fixed neurological defect during infancy, but rather a disorder of the timing and integration of neurological maturation. It was hypothesized that poor integration of early neurological development in infants with schizophrenia is a more primitive manifestation of the same underlying disorder of integration that is manifested in adult schizophrenics by the disorganization of complex psychological functions (13).

The current study analyzes the histories of children with a variety of psychiatric disorders, to investigate whether any correlation exists between abnormal neurological development in infancy and psychological functioning in later childhood. With all the inaccuracies of a history taken 3-8 years after the fact, would it be possible to find any relationship between disturbances of early motor development and the level of later intellectual functioning and the type and severity of psychopathology?

METHOD

The 85 children used for this study represent 90% of the children under 12 who were treated in the author's private practice in the last 7 years. A detailed history of pregnancy, birth and early development was obtained by the author as part of the

¹ Read at the 110th annual meeting of The American Psychiatric Association, Atlantic City, N. J., May 9-13, 1960.

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initial psychiatric history. The child's history, as recalled by the parents, was supplemented whenever possible by data recorded during infancy in obstetrical and pediatric records, and in baby books and dated snapshots.

The initial evaluation of each child included psychiatric and neurological examinations by the author, and complete psychological testing.³ Younger children were given the Gesell Developmental Tests and the Stanford-Binet; older children were given the Wechsler Intelligence Scale for children and the Bender Gestalt test, in addition to projective and academic tests.

Each child was diagnosed as having schizophrenia, organic brain disease or primary behavior disorder. Of the 28 children diagnosed here as being schizophrenic, 24 were independently diagnosed as schizophrenic by other psychiatrists. One additional child was diagnosed "psychosis with mental deficiency" elsewhere. The 6 diagnoses made here of organic brain disease were also independently confirmed for 5 of the children; the 6th had been reliably diagnosed as suffering from cretinism in infancy, and had responded to thyroid medication. The remaining 51 children were diagnosed as having primary behavior disorders. Only a few of these children were ever seen by other psychiatrists.

The rating of abnormal neurological development in infancy was limited to an analysis of postural development and locomotion, since this was the only area in which adequate data were available. The extremely important development of fine coordination is almost never recalled or recorded by anyone, including pediatricians. Abnormalities of alertness and activity were recalled by some parents, but the observations were too subjective to compare in different subjects.

Postural development was first analyzed for single deviations from Gesell's norms (16). Single landmarks were rated as "accelerated," if the child acquired a skill so early that his development at that point was 140% of normal; similarly, landmarks were rated as "retarded," if the skill was

acquired so late that development was only 70% of normal (Table 1). Single deviations of this type are a fairly frequent occurrence and were considered to be minor abnormalities. Only a series of 2 or more such retardations was considered to be a "major deviation." Early postural development was also considered to show a major deviation, if it exhibited the type of longitudinal irregularity which had been found in the earlier studies of schizophrenic children (13). Thus, a major irregularity was noted, if the child's development showed both retardation and acceleration, one after the other. The underlying disturbance on which attention was focused was a disturbance of the integration of development, rather than merely slow or fast development. It was assumed that development is disorganized, if it is "out of step" with itself, and shows marked changes in rate or changes in the usual sequence of postural control, as opposed to development which merely deviates from the statistical norms. In the direct studies of development, it is also possible to measure the spread between different aspects of postural development on each examination, and the spread between postural development and fine coordination (12). The data in the current study, obtained by history, were not detailed enough for such an analysis and could only be rated for gross longitudinal irregularities (Table 1).

TABLE 1
Standards for Rating Postural Achievements
(age in months)

	ACCELERATED (140%)	AVERAGE	RETARDED (70%)
RAISES HEAD (in prone)	½	2	3
ROLLS (supine to prone)	3	5½	8
SITS (with support)	4½	6½	9
STANDS (hold- ing on)	6½	9	13
WALKS (without support)	9	13	19

RESULTS

When the children in each diagnostic category are divided according to I.Q., all

³ The author is indebted to Florence Halpern, Ph.D., and Joan Havel, Ph.D. for the psychological testing.

of the severe disturbances in intellectual functioning occurred in the groups with schizophrenia and organic brain disease (Table 2). Of the 28 schizophrenic chil-

TABLE 2
Distribution of I.Q.'s in Each Diagnostic Group

	UNDER 70	70-90	OVER 90	TOTAL
Organic Brain Disease	3	2	1	6
Schizophrenia	11	9	8	28
Behavior Disorder	0	0	51	51

dren, 11 had I.Q.'s under 70, 9 had I.Q.'s between 70 and 90, and only 8 had I.Q.'s above 90. Five of the 6 children with organic brain disease had I.Q.'s under 90, 3 of them under 70. In contrast to this, all of the children with primary behavior disorders had I.Q.'s over 90. Since all 85 children came from families with average to superior intelligence and educational background, and were not exposed to environmental conditions which might depress intellectual functioning, their I.Q.'s tend to reflect the severity of their psychopathology.

Poor integration between various intellectual functions also occurred more frequently in the groups with schizophrenia and organic brain disease (Table 3). More

TABLE 3
Incidence of "Scatter" Between Verbal and Performance Scores

	SCATTER (10 POINTS OR MORE)	NO SCATTER	TOTAL
Organic Brain Disease	6	0	6
Schizophrenia	24	4	28
Behavior Disorder	23	28	51

than 10 points difference between Performance and Verbal scores on the WISC (or Adaptive and Language scores on developmental testing) was taken as the measure of abnormal "scatter." All of the children with organic brain disease showed this degree of scatter, as did all the schizophrenic

children, except for 4 with I.Q.'s under 70. Less than half of the children with primary behavior disorders showed marked scatter.

In Table 4 the incidence of each type of motor development is indicated for each diagnostic and I.Q. category. Major irregularities in development, with both retardation and acceleration, occurred most frequently in schizophrenic children with I.Q.'s under 70. However, this type of irregularity also occurred in 2 children with milder psychological dysfunction. One was a schizophrenic boy of average intelligence; however he was the only one of the bright schizophrenic children who had been considered bizarre since he first entered school. The other was a hyperactive girl with average intelligence who had always had moderate anxiety and who developed a school phobia at 9 years of age. She was considered to have a behavior disorder of only moderate severity.

Multiple retardations occurred most frequently in the children with organic brain disorder, but also occurred in schizophrenic children with I.Q.'s under 90. The degree of early motor retardation was comparable in the 2 groups.

Single (*e.g.*, "minor") deviations occurred in 25-33% of the children of each diagnostic category (Table 4). Two-thirds to

TABLE 4
Distribution of Deviations in Motor Development

	ORGANIC BRAIN DISEASE	IQ UN- DER 70	70-90	OVER 90	BEHAVIOR DISORDER
Major Irregularity	0	4	0	1	1
Multiple Retardation	3	2	1	0	0
Single Deviation	2	4	5	1	17
No Deviation	1	1	3	6	33

three-fourths of the children with average intelligence had no history of deviations in motor development, regardless of whether their diagnosis was schizophrenia or primary behavior disorder.

Although grossly irregular and retarded motor development occurred most frequently in the schizophrenic children with the lowest I.Q.'s, almost half of these children regressed after a history of relatively minor motor deviations. At any time from 8 to 30 months of age they became withdrawn and spoke less, if language had been present. These regressions were usually marked by diminished activity. Parents stated "he seemed to lose life," "moved less," "slept more," or "moved more slowly." However, when this change in motor activity was not accompanied by any gross loss of established postural control, it was not reflected in the quantitative scoring.

Except for 2 children with organic brain disorder, there was no association of serious complications of pregnancy or delivery with the major deviations of motor development. The complications which were considered to be significant included bleeding or toxemia during pregnancy, prematurity, erythroblastosis fetalis and neo-natal cyanosis. Such complications occurred in 7 children with histories of normal motor development or only a single deviation; (2 schizophrenic children with I.Q.'s of 85 and 100, and 5 children with primary behavior disorders). Complications during pregnancy and delivery did not occur in any of the children with schizophrenia or behavior disorders who had major deviations in postural development; however, the mothers of 2 of them had virus infections (mumps and "flu") at the time they delivered.

DISCUSSION

In a study such as this, where data on early development were obtained by history, the presence of an abnormal history is more significant than the absence of such a history. One cannot know how many of the children with negative histories would have shown minor or major deviations, if their development had been examined carefully during infancy. A study based on historical data is obviously subject to many distortions. The positive histories were checked through other sources, but it was not possible to make any correction regarding the negative histories for the complex factors which caused some parents to notice less,

or to forget more, than other parents. The child's age when the history was obtained, seemed to make little difference; as many histories of early deviations were obtained on children who were older than 6 years as were obtained on younger children.

The number of negative histories would also tend to increase, since the analysis of deviate development had to be limited to the one variable of postural control. Such a method misses neurological deviations that show up in the scatter of postural development or in disturbances of alertness, autonomic functions, physical growth and the development of fine coordination and visual motor organization. Analysis of any single function, such as postural control, will miss disturbances of neurological integration, when the major effects are in these other areas. A complete study of early integrative capacity can therefore be made only on the growing infant; the study of his history will yield only fragmentary data.

In view of the limitations of the method, it is noteworthy that it was possible to pick up histories of significant deviations of early motor development, not only in half the children with organic brain disease, but also in a number of schizophrenic children. These motor deviations indicate that there is some involvement of the central nervous system in certain schizophrenic children before the age of 2 years, although later on they do not show any gross motor dysfunction. Neurological involvement that was severe enough to be reflected in a history of disturbed motor development occurred more frequently in the schizophrenic children with I.Q.'s under 70. Clinically these children showed the features of early infantile autism. Follow-up studies on this sub-group of schizophrenic children show that the course of the child's illness appears to be almost completely independent of the external influences of parents, schooling and psychiatric treatment, and to depend almost entirely on whether the child retains any inner capacity for further development(7). One might say that these children with the most severe form of childhood schizophrenia show the greatest preponderance of constitutional factors, on the basis of the fol-

low-up studies. The importance of constitutional factors may also be reflected in their neurological deviations in the first 2 years of life.

Pollack and Goldfarb have shown that even over 6 years of age there are more signs of neurological dysfunction in schizophrenic children with lower I.Q.'s (below 80-90). More of the children with impaired intellectual functioning showed abnormal postural and vestibular responses(22), persistent errors on the Face-Hand test (21) and confused orientation as to time and place(20). These studies of school age schizophrenic children indicate that disturbances in integration that are severe enough to interfere with intellectual functioning, also tend to be associated with disturbances in motor and perceptual functions. The present study suggests that this disturbance of neurological integration starts before 2 years of age in many of these schizophrenic children with severe impairments in later psychological functioning.

The ability to define sub-groups of childhood schizophrenia in terms of different developmental patterns and specific impairments in function is essential for clinical management of these children. Psychiatric treatment must be based on a realistic appraisal of the child's prognosis. The child's educational program must be geared to his intellectual capacities and to his particular disturbances in perceptual, visual motor and language functions. Frequently methods used in training brain damaged children are helpful, when adapted to the special problems of the schizophrenic child(17). The degree of intellectual impairment not only limits the effectiveness of psychological measures, but it may also affect the degree of response to physiological measures(14).

However, the existence of important clinical differences between sub-groups of schizophrenic children does not necessarily mean that these differences arise from different etiological factors. The schizophrenic children with lower I.Q.'s and more evidence of neurological disturbance may merely represent a more severe variant of the illness. There was no evidence in this study that prenatal or parnatal complications

contributed to this more severe picture, but obviously much larger studies are needed to decide this point.

The fact that some schizophrenic children shift from more severe to less severe clinical pictures and vice versa(2, 8) tends to substantiate the concept of an illness with courses of varying severity(15). In this study several children who showed relatively little neurological disturbance in the first year of life, regressed shortly thereafter so that they resembled the children with severe disturbances in the first months of life. The opposite type of course also appeared in 2 children with major deviations in the first year; one developed a schizophrenic psychosis, but functioned intellectually in the average range (though well below his normal sister), the other showed a clinical picture later that was indistinguishable from the other children with primary behavior disorders. In an earlier study of developing infants, 3 infants who had milder deviations similar to those of a schizophrenic infant, showed behavior disorders in later childhood that were much more severe than those of the normally developing infants studied by the same methods(11).

The data suggest that rather than any absolute division of schizophrenic children into those with and those without central nervous system involvement, there may be a spectrum of varying degrees of developmental disturbance. Similar factors may even be involved in the lower threshold for anxiety in some children with primary behavior disorders. Environmental factors would be relatively less important, the more severe the intrinsic tendency to poor integration of development. Whereas with milder intrinsic disturbance, environmental stress or support would play an increasingly important role. The severity of later impairments would depend on such critical factors as the timing and duration of early neurological disturbances, and whether the child's environment tended to exaggerate or to counteract his particular difficulties.

SUMMARY

The analysis of early postural development and locomotion can be used as one measure of the integration of central nerv-

ous system maturation in the first 2 years of life. Using this index, involvement of the central nervous system was found in the histories of half the children with organic brain disorder and half the children who had severe schizophrenia with defective intellectual functioning. However, there was no absolute division of children with schizophrenia or primary behavior disorders into those with and without evidence of early neurological disorder. It is suggested that there may be a spectrum of developmental disturbances and that the severity of these may be related to the difficulties some individuals experience in maintaining psychological integrity in the face of stress.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

STUDY OF BUTYRYLPERAZINE (BAYER 1362)

HERMAN C. B. DENBER, M.D., ELIZABETH ROSS, M.D.,
AND PAUL RAJOTTE, M.D.¹

Butyrylperazine(1) was found to be more potent and to produce fewer disabling side effects than thioperazine(2). This report deals with the use of 3-n-Butyryl-10 (3' dimethylaminopropyl) phenothiazine in 20 acute and chronic psychotic female patients from 4 to 74 days.²

The setting (a therapeutic community) has been described in detail elsewhere(3). The multiple observer technique was used.

The patients ranged in age from 18 to 56 years, with 16 between 30-49 years. Eighteen were schizophrenics and 2 suffered from a manic-depressive psychosis. Eleven patients had 1 to 4 previous hospitalizations; 7, 5-8; and 2, 10-13.

The duration of treatment was 4 days in 1 patient; 10-29 days—4 patients; 40-59 days—8 patients; 60-74 days—7 patients. The initial dose was 5 mg. q.i.d. I.M. in 14 patients. The final dose ranged from 5 mg. t.i.d. to 100 mg. t.i.d. (orally). Extrapyramidal reactions were noted in 8 patients; 5 complained of excessive drowsiness. There were few other side reactions. Hematologic or liver chemistry changes were not observed.

Four patients were much improved (one of whom relapsed subsequently); 4 were improved; 11 were unchanged; and 1 was worse.

The compound showed fewer toxic side effects than many other available drugs,

and patients did not complain of feeling like "lead." The drowsiness was not dose-related. The use of increasingly higher doses (300 mg. daily—4 patients) did not materially influence the end result. Neither dyskinesia nor other neuromuscular involvement was observed, contrary to other observations(1). Since acutely ill patients did not respond rapidly, it would seem that butyrylperazine has a slow onset of action. Patients discontinued from the drug relapsed, at times within 48 hours, suggesting a rapid excretion. Although many of the present group of patients were chronically ill, thioperazine achieved a substantially better result in a similar patient sample(4). The effectiveness of butyrylperazine appears to lie between chlorpromazine and the other piperazine phenothiazines.

We were unable, therefore, to confirm the German observations. In a review of the data with Professor Flugel and his collaborators, it was found that: 1) our highest dose (300 mg. daily) was approximately 10 times their maximum dose; 2) their incidence of extrapyramidal reactions was almost twice the present group; 3) dyskinesias occurred in 45% of their patients with none in our series; and 4) their improvement rate was in the neighborhood of 65-70%. This suggested that we were dealing with a different patient sample.

Our inability to confirm European findings with this drug, "Haloperidol" or "Taractan," has made it necessary to review the entire problem of drug evaluation as affected by genetic, socioeconomic, cultural and other factors. Little attention has been given to the setting in which drug trials are conducted. At the present time, our tentative hypothesis is that the apparently marked

¹ Research Division, Manhattan State Hospital, Ward's Island, New York 35, N. Y.

² Butyrylperazine (Bayer 1362) was provided through the courtesy of Dr. J. Sommer, Farbenfabriken Bayer, Leverkusen, West Germany. The authors are grateful to Riker Laboratories, Northridge, Los Angeles, for additional supplies (Riker 595), as well as a generous grant-in-aid.

heterogeneity of the present patient population probably represents a genetically different biochemical reactivity in terms of each patient's response to treatment.

This problem is now being investigated jointly, through the use of matched samples, with Dr. D. Bente (University of Erlangen, Germany), and Dr. J. Collard (University of Liege, Belgium), and will be reported in greater detail at another time.

PRELIMINARY REPORT ON TARACTAN

JANF E. OLTMAN, M.D., AND SAMUEL FRIEDMAN, M.D.¹

Taractan² is 2-chloro-9-(3-dimethyl-amino)propylidene thioxanthene. Although not a phenothiazine derivative, it is stated by the manufacturer to have tranquilizing potency similar to that of the phenothiazine compounds and also to exhibit antidepressant efficacy.

The drug was administered to 53 newly admitted patients. It was discontinued in 3 patients, leaving 50 cases for evaluation. They were all females, ranging in age from 16 to 70, with 58% in the third and fourth decades of life. Diagnostic classification is indicated in Table 1. Dosage ranged from

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garded as "mixed type" and 1 as depressed. Of the 12 patients in these 2 diagnostic categories, 8, or 67%, were considered to have achieved a remission or much improved status, and 3, or 25%, were regarded as improved. It is apparent, therefore, that the drug exerts its greatest effect on patients with prominent affective components in their illness.

Of the 32 schizophrenic patients, only 2 were regarded as much improved and 3 as improved. The duration of present illness in these 5 patients was 1 year or less. In contrast, only 15% of the schizophrenics with

TABLE 1

Diagnosis	Total Number	Remission or Much Improved	Improved	Slightly or Not Improved
Schizophrenia	32	2	3	27
Schizo-affective	9	5	3	1
Manic-depressive	3	3	0	0
Involuntary psychosis	4	1	0	3
Psychoneurosis	2	1	0	1
	50	12 (24%)	6 (12%)	32 (64%)

100 to 300 mg. daily, with 150 to 200 mg. as the most frequent daily dosage. The drug has been used for periods ranging up to 5 months.

Results are indicated in Table 1. It is evident that best results were obtained in the schizo-affective and manic-depressive groups. In the latter, 2 patients were re-

insignificant improvement had a present illness of less than 1 year. In 70% it was more than 2 years, and in 41% more than 5 years. As emphasized in a previous report(1), duration of present illness is a significant prognostic factor in schizophrenia. It should be indicated also that in the schizo-affective group, duration of present illness may have been a pertinent modifying factor, as in 67% of this group the present illness was less than 1 year. The sole patient in this group

¹ Newtown, Conn.

² Supplied by Hoffman-La Roche Inc., Nutley, N. J.

who failed to improve had been ill more than 5 years.

Of the 32 schizophrenics, 20 also received other ataractic drugs, either before or after Taractan or at a previous episode of illness. In 6 instances, other drugs produced a superior level of improvement, in 12 cases they were equally ineffective and in 2 the degree of improvement was similar.

Complications were absent and side-effects were few at the dosage level employed. As indicated, the drug was discontinued in 3 cases within a few days because of excessive somnolence or dizziness. In the group of 50 patients, there were 4 who complained of mild drowsiness, 1 exhibited some degree of restlessness and 1 had hypotension. Thus side-effects were definitely less than with

other drugs. One depressed patient, described briefly in a previous communication (2), who had experienced dizziness and fainting under Marplan and Tofranil, recovered uneventfully under Taractan.

CONCLUSIONS

It may be stated that Taractan appears helpful in patients who exhibit prominent affective components in their illness. It would seem to merit further study.

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A PILOT STUDY OF THE EFFECTS OF PATHCOLE, A SEROTONIN ANTIMETABOLITE, ON SCHIZOPHRENIC PATIENTS

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CLARA MORPURGO, M.D., G. AYALA, M.D., H. E. HIMWICH, M.D.,
AND VASSO VASSILIOU, M.A.¹

PURPOSE

Accumulated experimental evidence as assessed by Woolley(1, 2) suggests that errors in the metabolism of brain serotonin may be associated with such mental states as depressions, with a deficiency of serotonin, and acute psychotic states, with an excess of serotonin. In an effort to obtain more information in this area Shaw and Woolley(3) synthesized Pathcole (6-phenylamidino-1,2,3,4, tetrahydrocarbazole). This drug, a potent antagonist to serotonin exerting tranquilizing effects in laboratory animals, was well tolerated in preliminary trials on non-psychotic human beings.

The purpose of the present study was to investigate the effects of Pathcole on acutely disturbed schizophrenic patients.

EXPERIMENTAL DESIGN

Six acutely disturbed schizophrenic patients were selected, 3 females and 3 males,

age range 19 to 38 (average 26 years). Duration of illness was less than one year for 3 and no more than 5 years for the other 3. Two had been diagnosed as chronic undifferentiated schizophrenic and 4 of the paranoid type.

Their selection for this study was based on additional independent evaluations to establish the presence of fully developed acute psychotic states. All patients presented hyperactivity, confusion, incoherent and irrelevant thought processes, delusions and one or more of the following disturbances : hallucinations, ideas of reference, flight of ideas, inappropriate affect, disorientation.

PROCEDURE

The experimental design included 3 conditions :

Condition I : A 2-week observation period following the transfer of patients in the research wards. Although an adequate knowledge of the behavioral patterns of all 6 patients was already available for comparison with possible drug changes, condition I provided for a levelling of any behavioral

¹From the Thudichum Psychiatric Research Laboratory, Galesburg State Research Hospital, Galesburg, Illinois.

changes the transfer to the research ward might have induced.

Condition II: A 5-week period under Pathcole during which a starting dose of 25 mg. daily was increased at the end of the first week to 25 mg. b.i.d. and was raised still further in accordance with individual progress until the dose of 25 mg. q.i.d. was reached for 3 patients while the other 3 attained the dosage of 25 mg. t.i.d. Pathcole was given for 5 weeks only because of our limited supply of that drug.

Condition III: A 4-week period under placebo.

At the beginning of condition I and at the end of conditions II and III respectively, the patients had physical examinations and in addition laboratory studies including CBC, urinalysis, and liver tests. Psychological examinations included a battery of 2 projective tests (Rorschach and Draw-a-Person), and 4 subtests from the Wechsler Adult Intelligence Scale (Information, Comprehension, Similarities, Digit Symbol). During all 3 conditions patients were interviewed weekly by 6 physicians for evaluation of mental status and observations of blood pressure, pulse, perspiration, dermatographism and reflexes.

RESULTS

Two patients, A and B, showed some improvement which lasted throughout condition III. Restlessness and psychotic symptoms decreased, rapport and behavior improved. Psychological tests showed increased motor coordination for A and in addition better relations with reality and less explosive expression of emotions for B. Patients C and D exhibited a shift of psychomotor activity toward normal limits and improved ward adjustment. In patient C this improvement was maintained throughout condition III with better relations with reality, less disruptive aggression, less explosive expression of emotions, decreased number of Rorschach responses and decreased motor coordination. Patient D, after the second week of condition III, became aggressive, disturbed and was not testable. Finally patients E and F showed some improvement during the third and fourth week

of condition II. Restlessness decreased, thought processes became somewhat organized, and affect improved. In the fifth week of Pathcole (25 mg. q.i.d.) they developed, however, a temporary turbulence-like stage including motor restlessness. Their previous psychotic symptomatology was accelerated as they became combative, unmanageable and were not testable.

The observed physiological changes were definite but did not show any specific correlation with the described clinical and psychological changes. All patients presented increased pulse rate (group mean rising from 92 to 112) and reflexes became more active (group mean from 1+ to 3+). Five patients revealed moderate increases of blood pressure (group mean from 109/74 to 137/88) and in only one case did blood pressure present no significant changes. Dermatographism increased in all patients. Idiomuscular reactions appeared in the fifth week of medication in all patients. Perspiration exhibited variable changes. No side reactions were observed.

There is no direct evidence that Pathcole actually entered the brain, and with techniques now available it is not possible to decide this point. Thus the results of this clinical study can not be used to substantiate nor to eliminate the hypothesis that excess of serotonin in the brain contributed to acute psychotic states. The observed moderate temporary improvements might be interrupted in accordance with Woolley's hypothesis and point to the need of more extensive studies of serotonin antimetabolites.

SUMMARY

The effects of Pathcole on 6 acutely disturbed schizophrenic patients were studied and some temporary improvements of varying durations were observed in each patient.

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COMMENTS

NATIONAL ASSOCIATION FOR MENTAL HEALTH GOLDEN ANNIVERSARY¹

Fifty years ago Clifford Beers, with the encouragement and support of Adolf Meyer, William H. Welch, William James and others, established in New York City the National Committee for Mental Hygiene, which he served as secretary for many years.

Ten years ago, the National Committee merged with the National Mental Health Foundation and the Psychiatric Foundation to form the present National Association for Mental Health.

Clifford Beers had a long perspective and he foresaw growing through the years a great science-based humanitarian movement in the interests of mental health. To some of his friends, Mr. Beers' forecast seemed nothing less than visionary, but he lived to see his dream realized; and in 1930 he was the central figure in an international congress in Washington to which came delegates from more than 50 countries representing as many mental hygiene societies, to pay him tribute.

Now this great national society in its present enlarged form is 50 years old, with more than 800 affiliates and over a million members and volunteers throughout the country. The Report of the N.A.M.H. of its last year of the half-century gives a vivid picture of progress during those five decades, and of its present and continuing projects and activities.

¹ The manuscript of this comment, prepared last year, was lost sight of during the process of moving the editorial office.

Because of the importance of the events commemorated it is felt that it should be published even thus belatedly.

Ed.

This report makes good reading. It tells of the research program of the National Association under the direction of Dr. William Malamud whose views of how research should be conducted were set forth in his Presidential Address before the American Psychiatric Association in Atlantic City in May of last year. During 1959, the Research Committee of N.A.M.H. made grants amounting to \$119,418.00 to 15 research projects throughout the country. In addition, the Committee distributed \$108,700.00 granted for schizophrenia research by the Supreme Council of the 33rd Degree Scottish Rite Freemasonry Northern Masonic Jurisdiction for the year 1959. It will be recalled that during the past 26 years the Scottish Rite has provided more than \$1,500,000.00 for research in schizophrenia.

Following testimony before Congress by N.A.M.H. and other agencies the Federal Government appropriated \$68,000,000 to the National Institute of Mental Health for 1960. This compares with \$4,250,000 in 1948, since which date, appropriations for this purpose have steadily increased.

The Golden Anniversary Meeting of the N.A.M.H. last year in Philadelphia was the largest in its history with delegates from 41 states and Canada. At this meeting, tribute was paid to Dr. George S. Stevenson, retiring Director after 33 years of devoted service. He was presented with a massive testimonial volume containing letters of appreciation from government and psychiatric leaders throughout the world.

This historic Report of the National Association for Mental Health was appropriately introduced by its President, Mrs. A. Felix du Pont, Jr.

NEWS AND NOTES

DEDICATION OF THE HOUSTON STATE PSYCHIATRIC INSTITUTE.—The new building of the Houston State Psychiatric Institute for research and training in the Texas Medical Center was dedicated on February 3, 1961. The Institute is a division of the Texas Board for State Hospitals and Special Schools—C. J. Ruilmann, Director—and is closely affiliated with the Department of Psychiatry of Baylor University College of Medicine. W. T. Lhamon is Chairman of the Department and has been Director of the Institute since its formation 3 years ago.

The chief address at the dedication entitled "Service, Research and Survival" was given by Dr. Kenneth E. Appel. The dedication was made by Dr. Ruilmann and Dr. Lhamon.

At the banquet in the evening, Dr. Louis J. West gave an address entitled "The Challenge of Experimental Psychiatry." To Dr. Eugen Kahn, Professor of Psychiatry at Baylor University College of Medicine and consultant psychiatrist to the Institute, a scroll was presented in which his friends and colleagues acknowledged their indebtedness to him:

"For pioneering accomplishments in the earliest psychiatric institutes of Europe and America;

For wise counsel to the faculty of the Department of Psychiatry of Baylor University College of Medicine and the staff of the Houston State Psychiatric Institute;

For scholarly contributions as a teacher, clinician, scientist, and writer for which he is honoured throughout the world;

For the warm compassionate feelings toward his fellow men which bring to them inspiration, affection, and humor."

Both ceremonies and an open house were attended by several hundreds including members of the Texas legislature. Out of town guests included Dr. Robert L. Stubblefield; Dr. Hamilton Ford; Dr. T. H. Hill; Dr. Floyd Cornelison; Dr. Hugh C. Blodgett, Chairman of the Department of Psychology, University of Texas; Dr. Louis D. Cohen, Professor of Psychology, Duke University School of Medicine; Dr. Irwin J. Knopf, Psychologist, Southwestern

Medical School; Dr. William Hurder of the Southern Regional Education Board; Dr. Robert Sutherland, Hogg Foundation.

The new building is of advanced design and in its 70,000 square feet of space contains a 60-bed hospital, adult and child outpatient clinics and a day hospital. These will be used solely for research and training purposes.

Nearly half of the space is devoted to laboratories for biochemical, biophysical, neurophysiological, pharmacologic, psychological and sociologic research. Staff members, who hold joint appointments in Baylor include John Kinross-Wright, Associate director, Neil Burch, William Boardman, Robert Edelberg, Seymour Fisher, Charles Gaitz, Sanford Goldston, James Knight, Irvin Kraft, and James Ragland.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION.—At the 38th annual meeting of the Association, Mar. 23-25, in New York City, Fritz Redl, Ph.D., became president for the year 1961-62.

Edward D. Greenwood, M.D., was named president-elect to take office in 1962, and Jules Henry, Ph.D., was elected vice-president.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—The sixth annual meeting of the Eastern Psychiatric Research Association will be held October 27 and 28, 1961 in New York City.

The theme of the meeting will be "Expanding Goals of Genetics in Psychiatry (1936-1961)."

Further information may be obtained from David J. Impastato, M.D., Secretary-Treasurer, 40 Fifth Ave., New York, N. Y.

THE INTERNATIONAL SOCIETY FOR CLINICAL AND EXPERIMENTAL HYPNOSIS.—The Society will hold its annual convention July 16-22 in Rio de Janeiro in conjunction with the Congresso Pan-Americano de Hipnologia and the Congresso Brasileiro de Hipnologia. The program will emphasize concepts and definitions of hypnosis, neurophysi-

ology of hypnosis, and medico-legal and ethical concepts in its practice. Those interested in attending or presenting papers can secure additional information by writing either : Oscar Farina, M.D., 1st Secretary, Brazilian Division ISCEH, R. Estados Unidos, F95, Sao Paulo, or David Akstein, M.D., President, Brazilian Society of Medical Hypnosis, Rua Cinco de Julho, 376, Copacabana, Rio de Janeiro, Brazil.

YALE UNIVERSITY SCHOOL OF MEDICINE POSTDOCTORAL FELLOWSHIPS IN PSYCHIATRY.—The Department of Psychiatry announces training fellowships focussed on laboratory work; training in clinical psychiatry is provided when required. The training is arranged to meet the specific goals and needs of each candidate.

Applications will be accepted from candidates with the M.D. or Ph.D. degree. Candidates from psychiatry should complete their second year of residency prior to their work on this program.

Stipends generally range from \$6500 to \$8500 per annum.

For further information write to Dr. Kenneth A. Chandler, Executive Director, Basic Science Program, Dept. of Psychiatry, 333 Cedar St., New Haven 11, Conn.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY.—The 15th annual meeting of the Society will be held at the Hotel Claridge, Atlantic City, June 9-11. The scientific program will include two symposia: 1. The Medicolegal Electroencephalogram, Dr. Isadore S. Zfass, chairman, June 10 at 2:00 p.m. 2. The Physiological Basis of Memory, Dr. Frank Morrell, chairman, June 11 at 9:00 a.m. All members of the American Psychiatric Association are invited to attend.

NATIONAL COUNCIL ON FAMILY RELATIONS.—The 1961 annual meeting of the NCFR will be held Aug. 23-25 at the University of Utah. The keynote address on "Difference, Tolerance, and Cooperation" will be delivered by Opert Tanner of the University of Utah, well known as a philosopher, great speaker, and world traveller.

Three plenary sessions will follow: "Eth-

ical Differences," "Ideological Differences," and "Religious Differences." Wallace Fulton, New York City, will act as moderator for the sessions.

EAST BAY PSYCHIATRIC ASSOCIATION.—The officers of this society for the year 1961 are as follows : President, Dr. Allen S. Mariner, San Leandro, Calif. ; President-Elect, Dr. Lloyd Patterson, Berkeley, Calif. ; Secretary, Dr. Melvin M. Lipsett, Berkeley, Calif. ; Treasurer, Dr. Eric Plaut, Berkeley, Calif. ; Elected as Councillor, Dr. John Visser, Berkeley, Calif.

A NEW UNIVERSITY POST.—President Clarence B. Hilberry of Wayne State University, Detroit, Michigan, reports the establishment of a new faculty post, the "University Professor" with its first incumbent Dr. John M. Dorsey who for the past 15 years has held the chair in psychiatry at his university.

It is understood that the duties of the new position will be quite informal. The University Professor will be able to maintain contact with students and teachers in the various departments with a view to presenting the educational process as a rounded whole rather than as merely the opportunity for the student to acquire information on a number of more or less isolated subjects in which he may find himself interested. A senior consultant, such as the new member of the faculty will be able to bring to the student body a new and broader concept of the learning experience, a wide humanistic view of what a university education can and should mean, both an outlook and an inlook on knowledge as the handmaid, though not a substitute for wisdom, leading in the direction of the ancient *nihil humani* tradition.

This new development at Wayne State University will be followed with much interest.

THE AMERICAN NEUROLOGICAL ASSOCIATION.—The 86th annual meeting of the American Neurological Association will be held at the Claridge Hotel, Atlantic City, New Jersey, June 12-14, 1961 under the

Presidency of Dr. Harold G. Wolff.

Information regarding the meeting may be obtained from the Secretary, Dr. Melvin D. Yahr, Neurological Institute, 710 West 168th Street, New York 32, New York.

INSTITUTE OF GENERAL SEMANTICS.—The 18th annual Seminar-Workshop in General Semantics—the first West-Coast Conference—will be held Aug. 12-27, 1961 at the University of California, Santa Barbara.

Enrollment limited to 60. Tuition, \$300 (includes registration fee \$30, which must accompany application). Room and meals for the period and the meetings, \$145. A few scholarships are available.

For information write to: Registrar, Institute of General Semantics, Cakeville, Connecticut.

SOCIETY FOR PSYCHOPHYSIOLOGICAL RESEARCH.—This new society will hold its first annual meeting in New York on Sept. 5 in conjunction with the American Psychological Association convention. The purpose of the society is to foster research on the somatic responses and their psychological relations in various academic disciplines including psychology, physiology, biology, psychiatry and instrumentation. All scientists interested in this research field are invited to attend the meeting and to consider membership. President of the Society is Chester Darrow, Ph.D., Institute for Juvenile Research, Chicago.

Details regarding membership and the program may be obtained from the Secretary, Albert F. Ax, Ph.D., The Lafayette Clinic, 951 East Lafayette, Detroit 7, Michigan.

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NEUROLOGY

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Green, Joseph B., M.D., Media, Pa.
Layton, Donald D., M.D., Chicago, Ill.
Mayer, Richard F., M.D., Boston, Mass.
Nelson, John Woolard, M.D., Memphis, Tenn.
Thomas, Juergen E., M.D., M.S., Rochester, Minn.
Toole, James F., M.D., Philadelphia, Pa.
White, Joseph Courtney, Jr., M.D., Philadelphia, Pa.

DEATH BY SUGGESTION.—Theodore X. Barber, Ph.D., writing in *Psychosomatic Medicine* (March–April 1961), considers reports of various forms of “voodoo death” among nonliterate people and concludes that black magic, sorcery, or suggestion have not been demonstrated to be the direct cause of such deaths; that some reported cases were apparently due to poison or organic disease, that in some instances the victim, believing death to be inevitable because of sorcery, refused food and water and died of starvation and dehydration; that the hypothesis that such death may be due to overstimulation of the sympathicoadrenal system or of the parasympathetic system is premature.

WISCONSIN PSYCHIATRIC INSTITUTE.—The Institute and the Department of Psychiatry, University of Wisconsin Medical Center, will sponsor a 3-day interdisciplinary research conference, August 29-31, 1961 on “The Physiological Correlates of Psychological Disorders.” Topics will include adrenocortical function during anxiety, psychophysiological problems, psychological factors in cardiovascular responses, and others.

Accommodations will be in lake front dormitories. Interested scientists and their families are cordially invited. Inquiries may be addressed to: Coordinator of Postgraduate Medical Education, The Wisconsin Center, 702 Langdon St., Madison 6, Wisc.

DR. BLAIN HONORED.—The Southern California Psychiatric Society at its annual meeting Apr. 29, 1961, presented a scroll to

Daniel Blain, M.D., Director of the Department of Mental Hygiene, State of California, for his long record of important contributions to the field of mental health. Dr. Blain, an international figure in psychiatry, was the first medical director of the American Psychiatric Association, and served ten years in that capacity before assuming this present post in California.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION.—The 26th meeting of this Association will be held on June 22, 1961 at 8:00 p.m. at the New York University Medical School, 30th Street and First Avenue, New York City.

Topics: 1. “The First Organization of Ex-patients of a Psychiatric Hospital—25 Years Later,” Jacob Friedman, M.D., New York City. 2. “Ambulatory Maintenance Electric Coma Therapy in Chronic Mental Illness—a 10-year Review of 50 Patients,” Emerick Friedman, M.D., Albany, N. Y. 3. “Views and Practices in Psychiatric Pharmacology,” Brian C. Campden-Main, M.D., Arlington, Va.

PSYCHIATRIC FACILITIES IN ISRAEL, 1960.—In December, 1960, I visited Israel for a short stay of 2 weeks. I shall mostly detail facilities around the intellectual center of the country, Jerusalem, but first will sketch a few observations about psychiatry in the country as a whole.

Psychiatric patients in Israel are cared for as follows: 1. The Government maintains, by far, the most facilities; 2. There are private practitioners in psychiatry and psychoanalysis, although they seem to carry less of the total patient load than in the United States; 3. Some Psychiatric treatment is provided through the various Sick Funds, of which the largest is Kupat Holim, the Sick Fund of the General Labor Federation (the Histadrut); 4. The kibbutzim singly and jointly provide for some of their psychiatric needs, for example, they maintain a Child Guidance Center at Oranim (see, Kaffman, M.: *Am. J. Psychiat.*, 117: 732, Feb. 1961); 5. The Hadassah Medical Organization carries out extensive programs of care; 6. Other privately supported or-

ganizations offer treatment, such as the American Joint Distribution Committee which cares for aged psychiatric patients in various parts of Israel.

The rest of my observations concern Jerusalem and its vicinity, which was the main focus of my visit. Several hospitals in the Tel Aviv area are described (*in* Klein, I. J.: *Am. J. Psychiat.*, 117: 459, Nov. 1960). In the Talbieh section of Jerusalem is the headquarters of the Israel Psychoanalytic Society (Dr. Erich Gumbel, President, M. Brandt, Secretary). It is an active organization, has a training institute, and includes members in the other cities of Israel. It holds some of its meetings and conducts part of its training program in Tel Aviv. Its members devote part of their time to psychiatry—Dr. H. Winnik is Director of the Talbieh Hospital and Dr. J. Schossberger heads the "Work Village"; Dr. Gumbel is Consultant to the Child Guidance Clinic of the Hadassah Medical Organization (The Albert and Mary Lasker Child Psychiatry Department).

The Government maintains a psychiatric hospital at Eitanim, near Jerusalem. This includes a children's ward with approximately 20, mostly autistic, patients. Of its roughly 100 beds for adults half are for acutely ill patients. Eventually it is planned to expand the hospital to 250 beds. The Government also operates for chronic cases a "Work Village" with emphasis on rehabilitation and provides funds for the care of patients in other hospitals, such as the custodial hospital at Ezrat Nashim, directed by the University professor of neurology, Dr. Halperin.

The Histadrut has its own psychiatric hospital in Jerusalem, the Talbieh Hospital, which includes an outpatient clinic, and supplies money for their members' visits elsewhere, such as to the Hadassah clinics.

Dr. I. Zellermyer is the head of the department of psychiatry, Rothschild Hadassah University Hospital and Hebrew University—Hadassah Medical School. The department includes an 11-bed inpatient service for research and teaching and an active outpatient division (for description *see* Moses, R., and Shanan, J.: *Arch. of Gen. Psych.*, 4: 60, Jan. 1961). Members of this depart-

ment, Drs. S. R. Moses and D. Hertz, are also consultants to the Institute of Criminology of the University. In a few months this department will move from its present scattered quarters to biblically historic Ain Karem, outside of Jerusalem, where rise the fabulous modern buildings of the new Hadassah-Hebrew University Medical Centre. Careful and thoughtful planning have produced what should be one of the most efficient as well as beautiful hospitals in the world today.

Hadassah also supports the Lasker Child Guidance Clinic, directed by Dr. Joseph Oren, who with Drs. Moses and Hertz, obtained part of their training in this country.

There are other small private hospitals in Jerusalem, and there still persists the former custom of caring for psychiatric patients in private homes. The Israeli Neuropsychiatry Association, of which Dr. Hertz is Secretary, has its headquarters in Jerusalem.

Though this is not a complete description of psychiatry in Israel, by focusing on various facilities I found in Jerusalem, I am implying that Israel has a level of psychiatry which compares favorably in many ways with other modern countries.

James A. Kleeman, M.D.
New Haven, Conn.

CANADIAN MENTAL RESEARCH REWARD AVAILABLE.—The Canadian Mental Health Association's National Mental Health Research Fund is now accepting applications for its annual Research Award, approximately \$25,000.

The recipient should reside in Canada and have appropriate scientific qualifications in any of the professional disciplines directly related with mental health or mental illness. The final selection of a candidate is the sole responsibility of the director of the Fund—Dr. Ray Farquharson, M.B.E., F.R.C.P., who is also director of the Medical Research Council in Ottawa.

Letters of application should be sent not later than June 1, 1961 addressed to: Dr. Ray Farquharson, Director, Mental Health Research Fund, Canadian Mental Health Association, 11½ Spadina Road, Toronto 4.

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ANNUAL INDEX

This periodical is indexed alphabetically under both Subject and Author entries.

In searching for a specific article, the Author entry should be consulted if the name of the author is known, since the complete bibliographical reference is to be found only after the author's name. When there are two or more authors for an article the complete entry appears only under the name of the first author. Under the names of each of the joint authors a cross reference is made to the original author entry.

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Class of compounds	TARGET SYMPTOMS OF DEPRESSION:			
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TRANQUILIZERS	"Failure of the tranquilizers to produce satisfactory results is due in many cases to their being prescribed for depression, especially depression masked by the more prominent symptoms of anxiety. The underlying depression may be deepened."			+ —
ANTIDEPRESSANTS			"CNS stimulants and anti-depressants, if given to anxious patients, will increase the anxiety...."	+
ELAVIL	"... this drug [ELAVIL] acted both as a tranquilizer and as an anti-depressant..." ² Many physicians customarily treat anxious or depressed patients with a combination of an antidepressant and a tranquilizer. This is seldom necessary when prescribing ELAVIL because it has both antidepressant and anti-anxiety properties.			++

AVIL

*effective in patients with depression...
particularly useful in those with predominant symptoms
of anxiety and tension... provides prompt relief of anxiety
and insomnia associated with depression*

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TRANQUILIZERS	ANTIDEPRESSANTS
ELAVIL	

INDICATIONS: Manic-depressive reaction—depressed phase; involuntal melancholia; reactive depression; schizoaffective depressions; neurotic depressive reaction; and these target symptoms: anxiety; depressed mood; insomnia; psychomotor retardation; functional somatic complaints; loss of interest; feelings of guilt; anorexia. May be used whether the emotional difficulty is a manifestation of neurosis or psychosis,⁴ and in ambulatory or hospitalized patients.^{2,4,6}

USUAL ADULT ORAL DOSAGE: Initial, 25 mg. three times a day, until a satisfactory response is noted. Many patients improve rapidly, although some depressed patients may require four to six weeks of therapy before obtaining maximum benefit. In severely depressed patients, as much as 150 mg. per day may be given. Maintenance, 25 mg. two to four times a day. Some patients may be maintained on 10 mg. four times a day. The natural course of depression is often many months in duration. Accordingly, it is appropriate to continue maintenance therapy for at least three months after the patient has achieved satisfactory improvement in order to lessen the possibility of relapse, which may occur if the patient's depressive cycle is not complete. In the event of relapse, therapy with ELAVIL may be reinstituted.

ELAVIL is not a monoamine oxidase (MAO) inhibitor. No evidence of drug-induced jaundice or agranulocytosis has been noted. Side effects (drowsiness, dizziness, nausea, excitement, hypotension, fine tremor, jitteriness, headache, heartburn, anorexia, increased perspiration, and skin rash), when they occur, are usually mild. However, as with all new therapeutic agents, careful observation of patients is recommended. As with other drugs possessing significant anticholinergic activity, ELAVIL is contraindicated in patients with glaucoma.

SUPPLY: Tablets, 10 mg. and 25 mg., in bottles of 100. Injection (intramuscular), 10 mg. per cc., 10-cc. vials.

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Before prescribing or administering ELAVIL, the physician should consult the detailed information on use accompanying the package or available on request.



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brand of tranylcypromine

'Parnate' is a new agent, effective in the relief of the symptoms of mental depression. Pharmacologically, it is a monoamine oxidase (MAO) inhibitor; chemically, a new compound that is distinct from the earlier "psychic energizers."

Improved usefulness in treating depressions. "Preliminary clinical experience indicates that tranylcypromine ('Parnate') is an improved type of monoamine oxidase inhibitor that appears to be more rapid in its action, effective in smaller doses . . . and relatively free of side effects."¹

More rapid onset of action. "An outstanding aspect of therapy with ['Parnate'] was its unusual rapidity of action; most patients began to show lifting of depression in less than 5 days."²

PRESCRIBING INFORMATION

The physician should be familiar with the material on dosage, side effects and cautions given below before prescribing 'Parnate', and with the principles of monoamine oxidase inhibitor therapy and the side effects of this class of drugs as reported in the literature. Also, the physician should be familiar with the symptomatology of mental depressions and alternative methods of treatment to aid in the careful selection of patients for 'Parnate' therapy.

INDICATIONS AND LIMITATIONS OF USE: For the relief of symptoms of mental depression, i.e., dejected mood, self-depreciation, lowered activity levels, difficulty in making decisions, disturbed eating and sleeping patterns, and variations of these basic symptoms. 'Parnate' controls depressive symptoms only. In cases with mixed depression and anxiety, 'Parnate' may aggravate the anxiety or increase agitation. If this occurs, reduce dosage or administer a phenothiazine tranquilizer concurrently.

'Parnate' is indicated in the following diagnostic categories, subject to the limitation stated above: reactive and other psychoneurotic depressions, involutional melancholia, depressive phase of manic-depressive psychosis, psychotic depressive reactions. With respect to severe endogenous depressions, it is impossible to predict, with presently known data, which patients will respond best to 'Parnate' and which to ECT. 'Parnate' may be indicated in some reactive depressions in which ECT is not indicated. 'Parnate' is not recommended to treat essentially normal responses to temporary situational difficulties.

NOTE: In depressed patients, the possibility of suicide should always be considered and adequate precautions taken. Exclusive reliance on drug therapy to prevent suicidal attempts is unwarranted, as there may be a delay in the onset of therapeutic effect or an increase in anxiety and agitation. Also, of course, some patients fail to respond to drug therapy.

DOSAGE: Dosage should be adjusted to the requirements of the individual patient. Dosage increases should be made only in increments of 10 mg. per day and ordinarily at intervals of one to three weeks. Side effects occur more often as dosage is increased.

Reduction from peak to maintenance dosage may be desirable before withdrawal. If withdrawn prematurely, original symptoms will recur. Experimental work indicates that inhibition of monoamine oxidase persists for only a few days after withdrawal. Thus,

any side effects due to this inhibition will probably recede rapidly upon withdrawal, which should be a distinct advantage of 'Parnate' therapy when the patient exhibits poor tolerance to antidepressant medication.

Standard dosage schedule

1. Recommended starting dosage is 20 mg. per day—10 mg. morning and afternoon.
2. Continue this dosage for 2 to 3 weeks.
3. If no response, increase dosage to 30 mg. daily—20 mg. upon arising and 10 mg. in the afternoon.
4. Continue this dosage for at least a week.
5. As soon as a satisfactory response is obtained, dosage may usually be reduced to a maintenance level.
6. Some patients will be maintained on 20 mg. per day; many will need only 10 mg. daily.

When ECT is being administered concurrently, 10 mg. b.i.d. can usually be given during the series, then reduced to 10 mg. daily for maintenance therapy.

NOTE: Because side effects are dose-related, dosage should not be raised above 30 mg. per day unless the physician first becomes familiar with the information on the use of intensive dosages of 'Parnate' in patients who are hospitalized or under comparable supervision. See available comprehensive literature, your SK&F representative, or your pharmacist.

SIDE EFFECTS: The patient may experience restlessness, overstimulation, or insomnia; may notice some weakness, drowsiness, episodes of dizziness, or dry mouth; or may report nausea, diarrhea, abdominal pain, or constipation. Occasionally, headaches have occurred. Symptoms of postural hypotension have been seen most commonly, but not exclusively, in patients with pre-existent hypertension; blood pressure returns to pretreatment levels rapidly upon discontinuation of the drug. Other side effects which might occur in rare instances are tachycardia, urinary retention, significant anorexia, skin rashes, edema, palpitations, blurred vision, tinnitus, chills, paresthesia, muscle spasm and tremors, impotence, sweating and possibly paradoxical hypertension.

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True antidepressant effect. "Those patients who responded to ['Parnate'] therapy experienced increased energy and interest without euphoria and restlessness; they were relieved of their thoughts of guilt and worthlessness, and looked and felt cheerful."³

Valuable in psychotherapy. "... when the patient recognized the improvement that was taking place [during 'Parnate' therapy], his participation in psychotherapy increased markedly, and subsequent improvement was rapid."⁴



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Most of these side effects can usually be relieved by lowering the dosage or by giving suitable concomitant medication.

CAUTIONS: Extensive clinical and laboratory work has shown that there is little likelihood of blood or liver toxicity. Since 'Parnate' is a non-hydrazine compound, it should prove to be exempt from the toxic effects on the liver thought to be due to the hydrazine moiety of some other drugs. However, severe toxic reactions have occurred with some monoamine oxidase inhibitors. Pending further clinical experience 'Parnate' should probably not be used in patients with a history of liver disease or in those with abnormal liver function tests. Drug-induced jaundice is often difficult to differentiate from other jaundice. However, there has been sufficient clinical experience with 'Parnate' to demonstrate that, if it has any potentiality for producing jaundice, the reaction must be rare. Also, the usual precautions should be observed in patients with impaired renal function since there is a possibility of accumulative effects in such patients.

Although 'Parnate' has been used in combination with various drugs (particularly Stelazine®, brand of trifluoperazine), some monoamine oxidase inhibitors have been reported to have marked potentiating effects on certain drugs, e.g., sympathomimetics, central nervous system depressants, hypotensive agents and alcohol. Therefore, the physician should bear in mind the possibility of a lowered margin of safety when 'Parnate' is combined with potent drugs and should adjust dosage carefully.

'Parnate' should not be used in combination with imipramine. (The reaction of a patient who attempted suicide with a deliberate overdose of 'Parnate' and imipramine was more severe than would have been predicted from the properties of either drug.)

CASES REQUIRING SPECIAL CONSIDERATION: Administer with caution to patients with recent myocardial infarction or coronary artery disease with angina of effort. Increased physical activity and, more rarely, hypotension have been reported. The pharmacologic properties of 'Parnate' suggest that it may have a capacity to suppress anginal pain that would otherwise serve as a warning sign of myocardial ischemia. When 'Parnate', like any agent which lowers blood pressure, is withdrawn from patients who tend to be hypertensive, blood pressure may again rise to undesirable levels.

When 'Parnate' is combined with a phenothiazine derivative or other compound known to affect blood pressure, elderly patients and

those with cardiovascular inadequacies should be observed more closely because of the possibility of additive hypotensive effects.

In patients being transferred to 'Parnate' from another monoamine oxidase inhibitor or from imipramine, allow a medication-free interval of one week, then initiate 'Parnate' using half the normal dosage for at least the first week of therapy. Similarly, a few days should elapse between the discontinuance of 'Parnate' and the administration of another monoamine oxidase inhibitor or of imipramine.

Because the influence of 'Parnate' on the convulsive threshold is variable in animal experiments, suitable precautions should be taken if epileptic patients are treated.

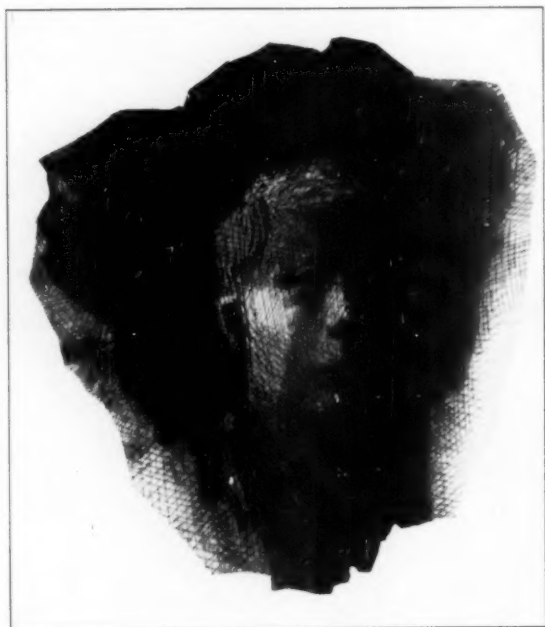
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AVAILABLE: 'Parnate' Tablets, 10 mg., in bottles of 50. Each tablet contains 10 mg. of tranylcypromine (trans-dl-2-phenylcyclopropylamine) as the sulfate.

Prescribing information adopted Feb. 1961

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IN BRIEF Niamid, brand of nialamide, is 1-(2-[benzylcarbonyl]ethyl)-2-isonicotinylhydrazine, a well tolerated antidepressant that may correct or relieve depression on once-a-day dosage.

Indications: Depressive syndromes of varying degrees of severity may be responsive to Niamid including: involuntal melancholia, postpartum depression, depressed phase of manic-depressive reaction, senile depression, reactive depression, schizophrenic reaction with depressive component, psychoneurotic depression. In neurotic or psychotic patients, Niamid may normalize or favorably modify aberrant or excessive reactions and symptoms of depression such as: phobias, guilt feelings, dejection, feeling of inadequacy, discouragement, worry, uneasiness, distrustfulness, hypochondriacal and nihilistic ideas, difficulty in concentration, insomnia, loss of energy or drive, indecision, hopelessness, helplessness, decreased functional activity, emotional and physical fatigue, irritableness, inability to rest or relax, sadness, anorexia and weight loss, and withdrawal from society. **In the withdrawn patient,** Niamid may elevate the mood so that there is increased activity, increased awareness and interest in surroundings, and increased participation in group activities. Appetite may be increased and there may be decreased fatigability. Lack of clinical response to other antidepressants does not preclude a favorable response to Niamid. Relief of depression may also be evidenced by elimination or reduction of the need for somatic therapy, such as electroshock. **In patients suffering from depression associated with chronic illness,** Niamid may improve mental outlook, reduce the impact of pain, decrease the amounts of narcotics or analgesics needed, and improve appetite and well-being. **In patients with angina pectoris,** Niamid has been found to be a useful adjunct to management through reduction in frequency of attacks and pain. **Dosage:** Starting dosage is 75 to 100 mg. on a once-a-day or divided daily basis. This may subsequently be adjusted depending upon the tolerance and response. Responses to Niamid are not usually rapid, and revisions of dose should be withheld until at least a few days have elapsed at each level. Increments or decrements of 12½-25 mg. are generally sufficient. A daily dosage of 200 mg. is the maximum recommended for routine use. (As much as 450 mg. daily has been used in some patients.) **Side Effects:** Niamid, in clinical use, has been characterized by a significant lack of toxicity. It is generally well tolerated. Nervousness, restlessness, insomnia, hypomania, or mania, sometimes occur. Occasional headache, weakness, lethargy, vertigo, dryness of the

mouth, blurred vision, increased perspiration, constipation, mild skin rash, mild leukopenia, and epigastric distress may be obtained or modified by reductions in dose. Effects due to monoamine oxidase inhibition persist for a substantial period following discontinuation of the drug. **Precautions and Contraindications:** Hepatic toxicity has not been reported in extensive clinical studies. However, if previous or concurrent liver disease is suspected, the possibility of hepatic reactions and liver function studies should be considered. The suicidal patient is always in danger, and great care must be exercised to maintain all security precautions. The apathetic patient may obtain sufficient energy to harm himself before his depression has been fully alleviated. Niamid may potentiate sedatives, narcotics, hypnotics, analgesics, muscle relaxants, sympathomimetic agents, thiazide compounds and stimulants, including alcohol. Caution should be exercised when rauwolfia compounds and Niamid are administered simultaneously. Rare instances have been reported of reactions (including atropine-like effects, and muscular rigidity) occurring when imipramine was administered during or shortly after treatment

with certain other drugs that inhibit monoamine oxidase.

In Cardiology: The central effects of Niamid may encourage hyperactivity and the patient should be closely observed for any such manifestation. Orthostatic hypotension or hypertensive episodes occur in a few individuals and cardiac patients should be carefully selected and closely supervised.

In Epilepsy: Although in some patients therapeutic benefits have been achieved with Niamid, in others the disease has been aggravated. Care should be exercised in the concomitant use of imipramine, since such treatment with monoamine oxidase inhibitors has been

particularly useful for depressed office patients because Niamid provides:

Remission of depression—smoothly, gradually, without “jarring.” Parker¹ reports that although Niamid is a slow-starting drug it produces a smoother effect than certain other antidepressants—those causing exaggerated CNS stimulant effects such as jitteriness, pressure of activity. “This is an advantage of nialamide [NIAMID] because such side effects frighten depressed patients and retard their improvement.”

Notably low incidence of serious complications or side effects. After laboratory tests of patients on Niamid therapy, Ayd et al.² found: “Thus, in contrast to other antidepressants, nialamide [NIAMID] has not caused anemia or any disturbance in renal or hepatic function.”

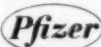
Convenience of once-a-day dosage.

1. Parker, S.: Dis. Nerv. System 20:2, Dec., 1959.

2. Ayd, F. J., Jr., et al.: Dis. Nerv. System 20 (Suppl.):34, Aug., 1959.

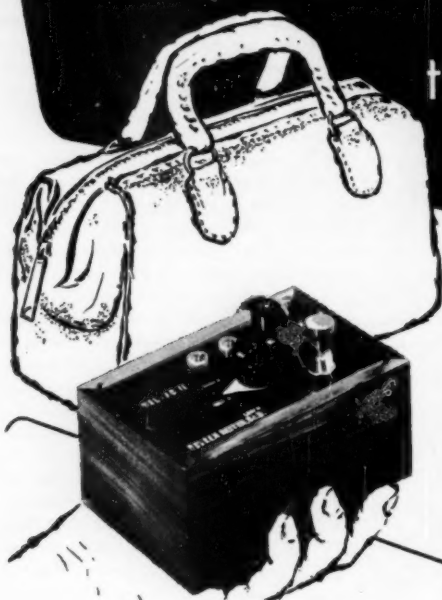
reported to aggravate the grand mal seizures. **In Tuberculosis:** Existing data do not indicate whether resistance of M. tuberculosis to isoniazid may be induced with Niamid therapy; nevertheless, it should be withheld in the depressed patient with coexisting tuberculosis who may need isoniazid. As with all therapeutic agents excreted in part via the kidney, due caution in adjusting dosage in patients with impaired renal function should be observed. **Supplied:** Niamid (Nialamide) Tablets, 25 mg.: 100's—pink, scored tablets; 100 mg.: 100's—orange, scored tablets.

More detailed professional information available on request.



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Consult literature and dosage information, available on request, before prescribing.



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FORM OF EQUANIL

The average adult daily dose is 1 capsule twice a day although a dosage range up to 2 capsules twice a day may be required by certain patients. Supplied: 400 mg. capsules.

For further information on limitations, administration and prescribing of EQUANIL L-A, see descriptive literature or current Direction Circular.

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
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XXIX



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PSYCHIATRIC PRESCRIBING INFORMATION

ADULT DOSAGE AND ADMINISTRATION

Dosage should always be adjusted to the response of the individual and the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become excessively troublesome.

Mental and Emotional Disturbances of Office Practice—Starting oral dosage is 10 mg.

t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semiweekly intervals (increase should be more gradual in emaciated or senile patients) until achieving maximum clinical response. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but in some cases, such as discharged mental patients, daily dosages as high as 800 mg. may be necessary. Starting intramuscular dose is 25 mg. (1 cc.). If necessary, and if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d. Hospitalized Psychiatric Patients—Acutely agitated, manic, or disturbed patients: Starting intramuscular dose is 25 mg. (1 cc.).

If no marked hypotension occurs, an additional 25 mg. to 50 mg. injection may be given after one hour. Subsequent intramuscular dosages may be increased gradually over a period of several days—even up to 400 mg. q-4h in exceptionally severe cases—until the patient is controlled. (In elderly or emaciated patients the dosage should be increased more slowly than in other patients.) Usually the patient becomes quiet and cooperative within 24 to 48 hours after the initial dose, at which time oral doses may gradually be substituted for intramuscular doses (mg. for mg. or higher). Even if control is not complete, oral doses may gradually replace intramuscular doses. During this period, oral dosage should be increased rapidly until the patient is calm. Usually an oral dose of 500 mg. a day is sufficient but, if necessary, the dosage may be gradually increased still further to 2,000 mg. a day or higher. Less acutely agitated patients: Starting oral dose is 25 mg. t.i.d. Subsequently, increase the amount gradually until an effective dosage is reached—usually 400 mg. daily is sufficient. Duration of therapy: It is important to determine the optimal dosage regimen and to continue treatment long enough for maximum clinical response. Maximum improvement is sometimes not apparent until after weeks or even months of therapy. Alcoholism—Starting intramuscular dose for severely agitated patients is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. Starting oral dose for agitated but manageable patients is 50 mg., followed by 25 mg. to 50 mg. t.i.d. For ambulatory patients with withdrawal symptoms or sober chronic alcoholics, starting oral dosage is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before Thorazine is administered.

FEDIATRIC DOSAGE AND ADMINISTRATION

For Behavior Disorders—Oral dosage is on the basis of $\frac{1}{2}$ mg./lb. of body weight q-4h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q-4h). Rectal dosage is on the basis of $\frac{1}{2}$ mg./lb. of body weight q-6h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q-6h). Intramuscular dosage is on the basis of $\frac{1}{2}$ mg./lb. of body weight q-6h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day. In children 5-12 years (or 50-100 lbs.)—not over 75 mg./day.

NOTES ON INTRAMUSCULAR INJECTION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least $\frac{1}{2}$ hour afterward. The injection should be given slowly, deep into the upper outer quadrant of the

buttock. If irritation and pain at the site of injection are problems, dilution of Thorazine Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted Thorazine Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery. Because contact dermatitis has been reported, avoid getting the solution on hands or clothing.

SIDE EFFECTS

The drowsiness caused by Thorazine may be unwanted in some patients. It is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextro amphetamine.

Other side effects that have been reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis.

Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses.

During Thorazine therapy some patients have an increased appetite and gain weight. Usually these patients reach a plateau beyond which they do not gain further weight.

CAUTIONS

Jaundice: In the more than 14 million patients who have been treated with Thorazine in the United States, the incidence of jaundice—regardless of indication, dosage, or mode of administration—has been low. Few cases have occurred in less than one week or after six weeks.

Jaundice due to Thorazine is of the so-called "obstructive" type; is without parenchymal damage; and is usually promptly reversible upon the withdrawal of Thorazine.

Because detailed liver function tests of Thorazine-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

Agranulocytosis: Agranulocytosis, although rare, has been reported in patients on Thorazine therapy. Patients receiving Thorazine should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted. Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells is sometimes observed in patients on Thorazine therapy. If not accompanied by other symptoms, it is not an indication for discontinuing Thorazine.

Potential: Thorazine prolongs and intensifies the action of many central nervous system depressants, such as barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating Thorazine therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately $\frac{1}{4}$ to $\frac{1}{2}$ the usual dosage of such agents is required when they are given in combination with Thorazine. (However, Thorazine does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if Thorazine is started. Rather, Thorazine should be started at a very low dosage and increased, if necessary.)

Hypotensive Effect: Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within $\frac{1}{2}$ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition.

In consideration of possible hypotensive effects, the patient should be kept under

observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If it is desirable to administer a vasoconstrictor, Levophed and Neo-Synephrine are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

Causes of Vomiting: The physician should always bear in mind that the antiemetic effect of Thorazine may mask signs of overdosage of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

Dermatological Reactions: Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some of them appear to be due to photosensitivity, and it is advisable that patients on Thorazine avoid undue exposure to the summer sun.

Extraparasympathetic Symptoms: With very large doses of Thorazine, as frequently used in psychiatric cases over long periods, there have been a few patients who have exhibited extrapyramidal symptoms which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug withdrawn. These symptoms can also be controlled by the concurrent administration of standard anti-parkinsonism agents.

Lactation: Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of Thorazine. This, however, is a transitory condition which disappears on reduction of dosage or withdrawal of the drug.

CONTRAINDICATIONS

In comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.), and also in patients under the influence of large amounts of barbiturates or narcotics.

AVAILABLE

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains chlorpromazine hydrochloride, 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg.)

Ampuls, 10 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500 cc. contain an aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfite, 1 mg.; sodium chloride, 1 mg.; Contains benzyl alcohol, 2%, as preservative.

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfite, 1 mg.; sodium chloride, 1 mg. Contains benzyl alcohol, 2%, as preservative.)

Spanule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each Spanule capsule contains chlorpromazine hydrochloride, 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains chlorpromazine hydrochloride, 10 mg.)

Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains chlorpromazine, 25 mg. or 100 mg.; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated coconut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles, boxes of 12 and 36; and in gallon bottles. (Each cc. contains chlorpromazine hydrochloride, 30 mg.)

Before prescribing Thorazine in any indication other than those given here, the physician should be familiar with dosage, side effects, cautions and contraindications for such indications. This information is available in: Thorazine® Reference Manual and Physicians' Desk Reference.

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that does not cause autonomic side reactions

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400 mg. meprobamate (Miltown®) sustained-release capsules

Usual dosage: One capsule at breakfast lasts all day; one capsule with evening meal lasts all night.

Available: *Meprospan-400*, each blue-topped capsule contains 400 mg. Miltown (meprobamate). *Meprospan-200*, each yellow-topped capsule contains 200 mg. Miltown (meprobamate). Both potencies in bottles of 30.



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XXXIV

Lift the depression with Marplan. Marplan has been shown to be considerably more potent than certain other amine oxidase regulators. While clinically such increase in potency has heretofore been associated with increased side effects, Marplan strikes a happy balance of potency/safety. Marplan has shown markedly fewer of the side reactions of the hydrazines (such as orthostatic hypotension, constipation, jitteriness, peripheral edema, skin rash). Moreover, throughout the extensive clinical investigations, no liver damage has been reported. Marplan is an amine oxidase regulator, however, and like all of these agents, it is contraindicated in the presence of liver or kidney disease.

Indications range from moderate to severe psychiatric disorders with associated symptoms of depression, withdrawal or regression. Marplan is also valuable as an adjunct in psychotherapy to facilitate the patient's responsiveness. Complete literature giving dosage, side effects and precautions is available upon request and should be consulted before prescribing.

Supplied: 10-mg tablets in bottles of 100 and 1000.

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1. Rappaport, J.: *Cur. M. Dig.* 25:57-62 (Nov.) 1958. 2. Fox, V., and Smith, M.A.: *Quart. J. Stud. Alcohol.* 20:767-780 (Dec.) 1959.

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Detailed Information on

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Promazine Hydrochloride

SPARINE is effective in the management of alcohol-induced syndromes, such as delirium tremens, acute hallucinosis, acute tremulousness and inebriation, as well as the withdrawal symptoms of drug addiction. SPARINE effectively controls central nervous system excitation, allays apprehension and anxiety, calms the agitated patient and is a useful adjunct to the management of mental and emotional disturbances. Both acute and chronic psychiatric illnesses respond to SPARINE therapy. SPARINE has been found to be useful in the management of nausea and vomiting of either central nervous system or gastric reflex origin. SPARINE effectively facilitates the action of analgesics and central nervous system depressants.

SPARINE may be used as an aid in diagnostic and therapeutic regimens. Such nonspecific symptoms as anxiety, pain, vomiting, nausea and hiccups frequently make more difficult both diagnosis and therapy of organic disease. SPARINE allays such symptoms without masking physical, neurological or laboratory findings.

DIRECTIONS. For maximal therapeutic benefit the amount, route of administration and frequency of dose should be governed by the severity of the condition treated and the response of the patient. Oral administration should be used whenever possible, but when nausea, vomiting or lack of cooperation is evident, SPARINE should be given intravenously or intramuscularly. SPARINE when used intravenously should not exceed a concentration of 25 mg. per cc.; injection should be given slowly. Dilute 50 mg. per cc. concentration with equivalent volume of physiological saline before I.V. use. Avoid injection around or into the wall of the vein.

Alcoholism, other Mental and Emotional Disturbances. In the management of agitated patients, SPARINE should be given I.V. in initial doses of 50 to 150 mg. If the desired calming effect is not apparent within 5 to 10 minutes, additional doses up to a total of 300 mg. may be given. Once the desired effect is obtained, SPARINE may then be given I.M. or orally in maintenance doses of 10 to 200 mg. at 4 to 6 hour intervals. In less severe disturbances, initial oral therapy may be satisfactory. When tablet medication is unsuitable or refused, SPARINE Syrup may be used. IN THE ACUTELY INEBRIATED PATIENT the initial dose should not exceed 50 mg. to avoid further depressant effect of alcohol.

As an Antileptic. Usual dose is 25 to 50 mg. repeated at 4 to 6 hour intervals. When oral route is not feasible, 50 mg. I.V. or I.M. will usually control the symptom, but oral medication should be initiated as soon as feasible.

PRECAUTIONS. Although rare, drowsiness, dizziness and transitory postural hypotension may occur. If a vasopressor drug is indicated, norepinephrine is recommended since SPARINE reverses the effect of epinephrine. Agranulocytosis has been reported in only 18 cases in about 3½ million patients. If, however, signs of cellular depression—sore throat, fever, malaise—become evident, discontinue SPARINE, check white blood cell count, and initiate antibiotic and other suitable therapy if indicated. Seizures, reported as occurring during SPARINE therapy, occur usually with rapid large increases in dose and at a daily dosage above 1 Gm. Caution must be exercised when administering SPARINE to patients with a history of epilepsy. Avoid perivascular extravasation or intra-arterial injection, as severe chemical irritation or inflammatory response may result. Because of its facilitating action on analgesics and central nervous system depressants, give them in reduced dosage with SPARINE. Do not use in comatose states due to central nervous system depressants (alcohol, barbiturates, opiates, etc.). Use with caution in patients with cerebral arteriosclerosis, coronary heart disease, or other conditions where a drop in blood pressure may be undesirable.

For further information on prescribing and administering SPARINE see descriptive literature, available on request.

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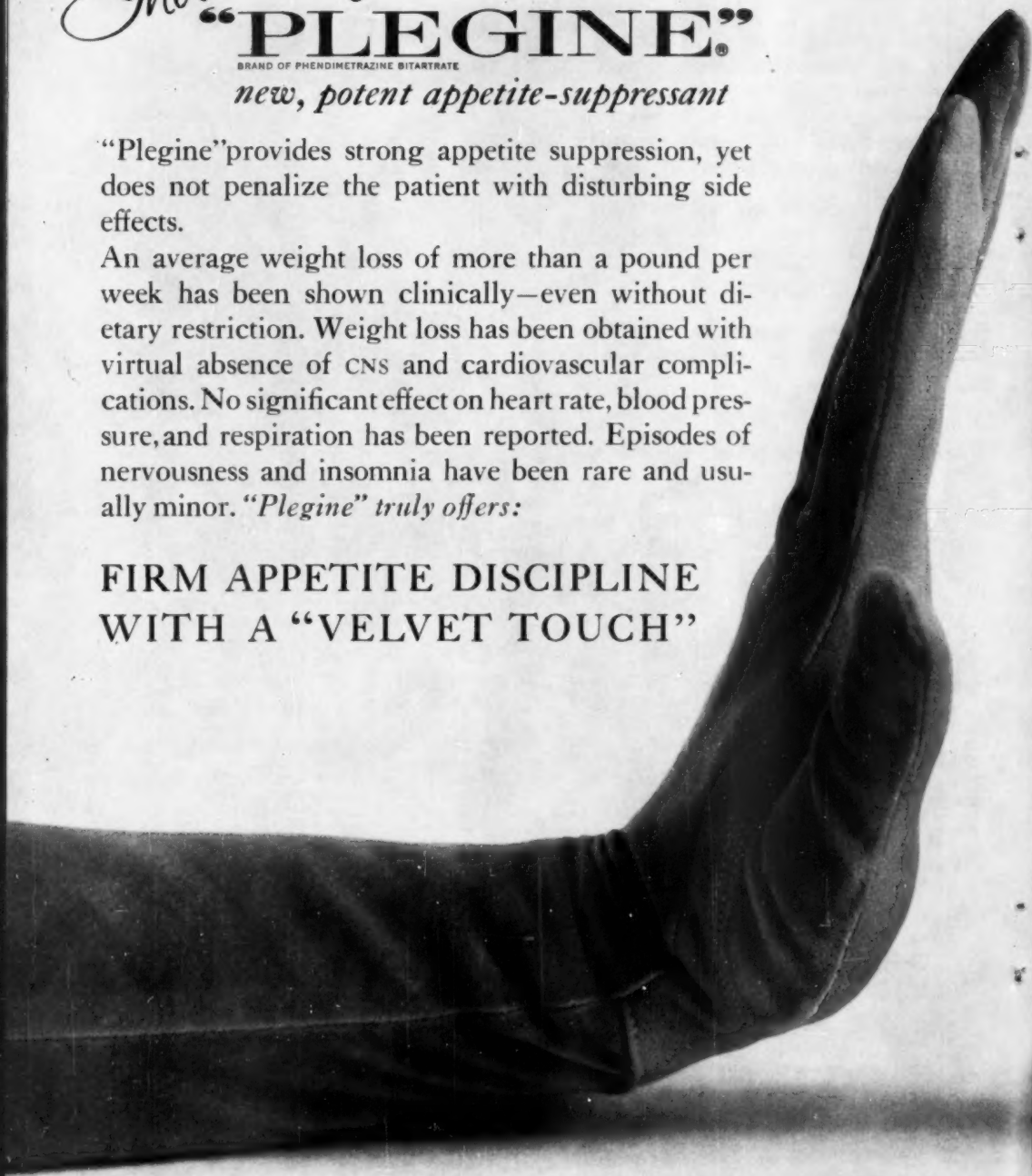
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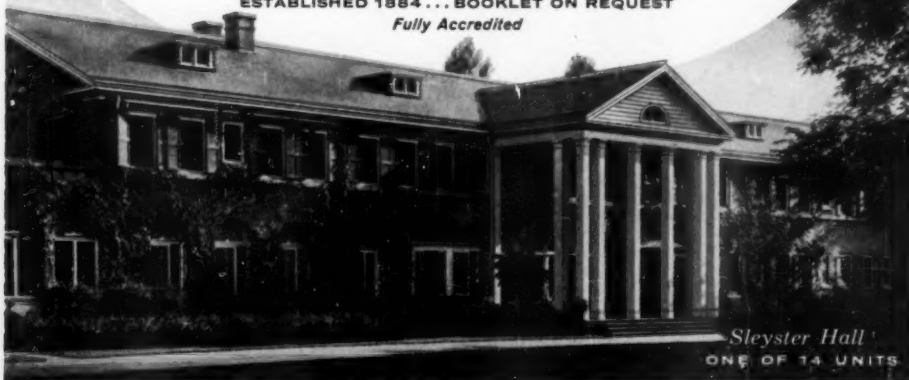
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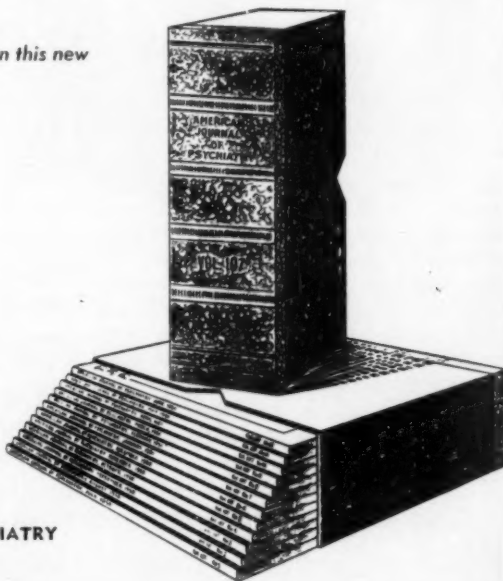
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